Original Articles.

THE LABORATORY IN THE STUDY AND TREATMENT OF CRIME.

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Many factors are combining to bring about a changing attitude towards certain social problems, particularly crime. Possibly the frequency of recidivism has had much to do with it. Certainly there has arisen in the minds of many serious thinkers a suspicion as to the adequacy of present methods of handling offenders. Possibly the growing unrest of the age, the ever-increasing desire for greater efficiency, lies at the bottom of it all.

However, this we know, that lessons already learned by workers in other fields have served to cause earnest students of crime to stop and consider whether, after all, the old and beaten paths are the best.

Certain fields of human knowledge have made immense strides, notably the recent and instructive achievements of modern medicine. There had been a complete change of front on the part of this science, the inclination to treat symptoms had given way to a tendency to search out the cause or causes, with a view to as complete eradication as is possible. The tendency to treat symptoms without any real knowledge of the underlying causes, which was such a serious element of failure in the treatment of physical ailments by the medical profession, gave way to a recognition of the positive necessity of sound laboratory methods, and a willingness to base treatment on such laboratory findings and research work, resulting in a far more rational basis of combating human ills.

This tendency to base treatment on a knowledge of the underlying causes has spread into other fields, and promises, especially in the handling of crime, to bring about an era of evolutionary changes similar to that which has been accomplished in the treatment of disease.

More and more is society realizing the positive necessity of studying the criminal as well as the crime. More and more are judges recognizing that there are considerations other than legal, and of as great importance, in handling offenders.

One hears the questions often asked,—What are the causative factors in this particular case? What does the particular individual need? How best can society be protected and the offender reformed?

One notices a growing tendency among criminal jurists towards individualization, and a handling of offenders in the light of what they are, rather than what they have done. There is a feeling that what we recognize as crime may more often be treated pathologically than morally; as it is clearly more often the result of irresistible physical forces than the deliberately chosen end of voluntary moral action.

There is a feeling that that great host of individuals, abnormal in mind and in body, in whom there is a serious question as to whether they really know the nature and quality of the act which they have committted and for which they have been arraigned, demand in the name of common justice that a scientific estimate of their capacity for what judges have been in the habit of calling "free moral action" be made. This is a crucial question, a question that cannot be settled by general observation, but is only answered by the trained scientific observer, and, in many instances, only after prolonged and patient investigation.

But then this would mean the establishment of laboratories with expensive apparatus and a corps of specially trained experts in our courts. Nevertheless, just this particular thing has been advised by Committee A of the Institute of Criminal Law and Criminology. The report of this committee contemplated the establishment of such criminological laboratories in the municipal courts of our larger cities, that were to furnish "such a diagnosis is of the criminal from psychological, neurological and sociological points of view, as might be of immediate practical aid to the judge who must sentence the defendant before the bar. It should furnish him with exhaustive knowledge of the individual case, in order that through his sentence he may adequately protect society, while doing the best that is possible for the prisoner as an individual." In general, the data supplied to the court by the laboratory will assist the judge in determining how he may best perform his protective service to society.

The research side of this work will not be lost sight of, for it was the purpose of the committee "that the laboratory serve to collect a body of anthropological, physiological, neurological and sociological data concerning criminals that will ultimately be of great scientific value."

This contemplates quite a forward step in socializing our courts, and means that the absurdity of interpreting as crime the reactions of the countless thousands of mentally weak of varying degrees of abnormality, who are incapable of understanding and measuring up to the dictum of society, will give way to an appreciation of the underlying causative factors in their conduct and a realization of the mental deficiency or disorder that often exists; that the imbecile, or feeble-minded man (man in physical years, but boy in mental), is unable to understand his obligations to society and will naturally fail to obey its mandates; that sentencing him to a penal institution for a short term of punishment presupposes that he exercises a free will in the line of evil,—a thing quite impossible, and fails to in any sense meet the situation; he is soon returned to society unmodified and after a short term of freedom he is again found in

the courts and again sentenced. This useless process is kept up over and over again. The pity of it all is that in the meantime he is liable to have become a hopeless pervert; all possible chance for improvement in the proper type of custodial institution, all possible chance for industrial education, and advance along the lines of habit training, and thus character building, has been lost.

After the report of Committee A, a certain development along these lines began to take shape in Boston. Mr. Albert J. Sargent, the chief of the Probation Department of the Municipal Courts, who had long felt the need of just such a laboratory in the courts, began to interest himself in the matter, with the result that soon the Chief Justice, Hon. Wilfred Bolster, after carefully considering the question submitted it to the judges, and in September of last year the work in which we are now engaged was initiated.

From the first we recognized the impossibility of examining anything like the number of individuals daily passing through the courts who needed a careful mental and physical examination before their cases could be properly disposed of. So, instead of taking the initiative, and picking out our cases, we decided to have the judges and probation officers do this and have them send us what they considered their serious problems. This course we have pursued all through. We quickly saw our good fortune in being in a court where there was a corps of very efficient probation officers,——men and women whose thorough manner of handling their problems was most pleasing to us. Their keen insight had already prepared the way for our work, and they welcomed us with an eager coöperation. Looking back over the year's work one can but feel deeply grateful for their kindly interest and most intelligent assistance. Most of all, we thank their chief, Mr. Albert J. Sargent. His thoroughly constructive attitude has been to us the most hopeful part of the entire situation.

Naturally, our first concern was the tools with which we had to work and the methods of getting at our problems. The recognition of the insane and the feeble-minded furnished no great difficulty, but the great borderline field lying in between, that on one side shades into mental disorder and on the other into mental defect, needed the development of accurate methods for investigation. On the one hand we had the unstandardized methods of the neurologist and the usual diagnostic measures of the psychiatrist. On the other hand the psychological laboratory offered us methods of experimental study by means of which the individual differences of men could be tested in a manner far beyond anything which common sense and social experience could suggest. That same accuracy shown by the physiologist in his investigation of bodily processes was to be found in the psychological laboratories in studying mental processes, but no coördinated system of tests for the adult individual were at hand,—nothing that could be lifted out bodily and be made to do the service we required for the study of criminals.

Healey had already evolved most practical methods for estimating certain abilities of juvenile delinquents. We had been using these tests since the opening of the Psychopathic Hospital in the investigation of all the borderline cases sent to the hospital, including juvenile court cases, industrial school girls, delinquents referred by various social agencies, backward children from the schools and others, with more satisfying results than could be obtained from any other method. In approaching adult criminals, however, many difficulties were at once apparent that forced upon us the conviction that we must develop our own methods for studying these individuals. The Binet-Simon tests we hardly thought of depending seriously on in connection with our work, realizing, after using them for several years, that they were quite inadequate for the purposes we were now called upon to use tests; intended by their authors for the classification of school children, they were not adequate to deal with an entirely different situation, the measurement of the degree of development of the mental processes of adult individuals. We were here dealing with such a complexity of factors, that, as our experience had long ago taught us, we would get an intellectual level in no sense representative of the true one if we relied upon the use of those tests.

The innumerable alcoholics would too often appear feeble-minded, for it is startling the number coming between 8 and 12 years Binet, but for the flashes of intellectual development, in many cases, beyond the standard to which the feeble-minded could aspire and indicating originally a maturity of mind often quite in keeping with their class in life; their low level being explained by a mental deterioration, an insidious impairment of all the senses, and a degeneration of the higher mental faculties, due to alcohol.

Other "derelicts" almost invariably show a lower level than their orginal status because of a deterioration due to their manner of living, discouragement, depression, and other factors. They are unable to respond to the Binet scale in a satisfactory manner and are included amongst the feeble-minded. But this is a serious matter, for it means all the difference in the world in our outlook on the general social situation. If their deficiency is native, then the steps to be taken along the lines of prevention are quite different from those to be taken if acquired.

Our first step was to standardize for our use certain methods of the neurologist and psychiatrist, but our principal task was in the development of mental tests for adults.

It seemed to serve our purpose best to use the scale method, and in this we sought not only a quantitative estimate of mental processes but a qualitative one as well. This latter point, that

mental tests serve their best purpose in enabling us to watch the mind in action, has always seemed to me of greater importance than their service as measuring rods. The scale consists of twenty points, and allows a credit of 100. The tests selected were considered best suited to bring into play those mental faculties that characterize the adult. These tests are being given in connection with Binet on every case, and we hope to make some comparative studies along these lines which will be of value. A report of our work with these tests is to be published soon.

In addition to a measurement of his mental capacity must come an estimate of his traits of character, a study of his personality. It was quite evident that the qualities here involved were not capable of direct experimental measurement, so that the only approach to the quantitative character that science demands consisted in an evaluation of comparative judgments about them. In this way have we sought to develop methods that would give us an estimation of our individual's ethical relations and enable us to examine into those qualities which constitute his value in relation to his fellows.

It has seemed to us distinctly worth while to arrange a chart for the recording of certain anthropological, psychological, neurological and sociological data, which when collected on a sufficient number of individuals may serve a better understanding of the crime problem. This we have done, after much time-consuming labor, so that now at the end of a year we feel that we are just beginning to get ready for our real work. In the meantime, we have all the while been doing plenty of clinical work, the courts being full of the richest material for investigation and study.

In a paper of this type it is impossible to go into many details showing the results of this changing attitude from punishment to treatment, but a few illustrative cases might be worth while.

The following case belongs to a type that it is very important from the standpoint of prevention to get hold of early.

E. W., age 20, arrested for larcency. Owing to persistent and uncontrolable crying the judge, at the suggestion of the probation officer, sent the girl to us for an examination. One found a well-nourished young girl with physical examination negative except for choreifrom movements. Mental examination, however, showed defect in memory, impairment in fund of general knowledge, some hallucinations, hypnagogic in character. She was greatly depressed, cried bitterly, was unwilling to talk much, wanted to get by herself. Such a mental condition had been quite marked for the last month, the change taking place at the time of having trouble with a sister, since which time she had been greatly depressed, crying considerably. She had noticed a distinct change in herself, and often felt like committing suicide. The judge very readily accepted the idea of treatment in the place of punishment and we sent her to the Psychopathic Hospital, where the diagnosis of dementia precox was confirmed, and the girl detained for observation and treatment. Her condition gradually began to clear up and finally she was tried out on a visit home. She began slowly to adjust herself to conditions, went back to work, is now in good health, earning good wages, and doing nicely. The fact is, the girl was not responsible for the crime she committed and had she received confinement in a penal institution would have doubtless deteriorated and soon have become an advanced case of dementia precox. She represents a group of cases that we are finding it quite important to get at in the earliest beginnings of their mental trouble if by proper preventive measures we are to ward off an oncoming dementia.

Another type is represented by E. C., age 27, street car motorman, arrested for larcency. The judge not feeling satisfied with answers he gave as to the motives of his conduct, sent him to us for investigation. One not only found larcency, but such accidents as driving his car into other cars repeatedly and imperilling passengers. Physical examination showed neurological signs suggestive of general paresis. Mentally he showed the classical picture of general paresis. The question of his mental soundness was placed before the judge, who readily substituted for the idea of punishment that of treatment. He was sent to the Psychopathic Hospital with the provisional diagnosis of general paresis. At the hospital the Wassermann was found positive for both blood and spinal fluid, and from there he was committed to Taunton.

We have had several individuals of this type, men charged with forgery, with assault and battery, with larceny, etc., whom it is quite important for society to get hold of and give the proper detention and treatment rather than a few weeks' punishment, not only for their own good, but especially for society's protection.

Of course there is a lot of substandard, inferior and defective individuals needing a special type of handling, rather than the ordinary routine probation and short term prison sentences. There are some who make good first impressions, appear superficially bright, are glib talkers, and deceive even the elect, whom mental examinations show to be of low grade intelligence and quite incapable of conducting themselves properly in a normal environment; and then on the other hand, there are many who appear much worse than they really are, who give the impression from personal appearance of being feeble-minded, but who as a result of mental examination show surprising mental capacity.

W. P., age 30, was of this latter type. Arrested repeatedly and given various terms of penal treatment, he was brought into court the time we saw him for drunkenness and lewd and lascivious cohabitation. Various different officials, court as well as jail, knew him and spoke to us of his being an imbecile. Physical examination showed results in facial muscles of paralytic condition in childhood, considerable ptosis of upper eyelids, relaxation of lower jaw and drooping of mouth; in fact, he did have the general appearance of an imbecile. Mental examination, however, was surprising, for he had good mental capacity. We found his mother was of low grade morally. They lived in a vicious environment, and influences in general were bad. The

ANALYSIS OF 140 MEN'S CASES.

	Drunkenness.	Larceny.	Attempt at Lar.	Assault and Battery.	Offenses Against Chastity.	Non-support.	Vagrancy.	Stubborn Child.	Threats.	Evading Cab Fare.	Forgery and Uttering.	Mal. Mischief.	Trespassing.	Vio. Drug Law.	Felonous Assault.	Totals.	Percentage.
Ment. defectives	8	9		1		2	2							1		23 or 16	3-7%
Cons. psycho.	25	3		3		14		1	3							49 or 35	%
Sub-normal	9	5		2		2	1			1		1		3		24 or 17	1-7%
Dem. precox	1	1	1			1	1					1	1			7 or 5	%
Epileptics	5			1												6 or 4	2-7%
Gen. paresis	2	1		1							1					5 or 3	4-7%
Cer. sp. syphilis	1					1										2 or 1	3-7%
Al. hallucinosis	1															1 or	5-7%
Psychasthenia	1															1 or	5-7%
Senile dementia	2						1									3 or 2	1-7%
Unclas. psychoses	2	2		1										1		6 or 4	2-7%
Normal	5	4			1	1								1	1	13 or 9	2-7%
	62	25	1	9	1	21	5	1	3	1	1	2	1	6	1	140	100%

court saw fit, as a result of our report, to put him on probation. The probation department secured him employment, and he was sent to the country on a chicken farm. He persisted in coming down to see me every week, and now, after a year, has a good position with a store in Boston, making $10.00 to $15.00 a week. He moved with his mother to a better neighborhood, and has had no return to his old bad habits.

One could go on multiplying instances of different types and merely be elaborating what is obvious, that there are a lot of deteriorating individuals in the courts, men and women, who have lost something they once possessed, or who never possessed very much, but who in the past have been considered confirmed criminals, who today are not going to be looked on in the light of hopeless incurables needing permanent segregation until society has failed in the more constructive measures of physical, mental and more intensively directed social treatment.

A general picture of the situation as regards the more serious problems in the court may be obtained from the following table, which consists of a report of the diagnosis of my last 350 cases:—

Mental defectives	31-1/7%
Dementia precox	3-5/7%
Constitutional psychopaths	24-2/7%
Subnormal	20-2/7%
Hysteria	4/5%
Psychasthenia	1/5%
Epilepsy	3-5/7%
Alcoholic hallucinosis	3/5%
General paresis	1-3/7%
Cerebro-spinal syphilis	3/5%
Senile dementia	1-5/7%
Unclassified psychoses	3-1/7%
Manic-depressive insanity	4/5%
Normal	3/7%

Here we have a reasonably larger group of defectives, individuals who started life with the handicap of retarded mental development, but the greater proportion are deteriorating cases, individuals showing evidence of an acquired condition rather than native.

To be sure, the constitutional psychopath has a poor soil to begin with; his nervous system is unstable, easily upset and less resistant to the battles of life than the normal, but the deterioration in these cases was in the majority of instances preventable. Sufficient facts are at hand to indicate that certain educative measures, physical treatment, and training in early life can go far towards preventing their becoming stranded later on.

There is a great horde of school children who are not up to par in their mental organization, who when subjected to the vicissitudes of life as adults are especially liable to develop the psychoses. These are the psychopaths, and they are usually completely overlooked. The teacher and medical examiner recognizes that they are neither defectives nor normal children; that they are not adjustable to the routine requirements of school and cannot be fitted into the ordinary régime, and usually let the matter drop there. Their anomalies of character and mental instability enable them to cope no better with the complex demands of life than it did with the simpler ones of life's training school; so they soon join that great body that Judge Gammell has so well termed "The Army of Defeat," and find their way into almshouses, prisons, insane hospitals and other institutions. What we need to bear in mind here is the efficiency of preventive measures.

The 350 cases that we have above referred to came from the first and second criminal sessions of the municipal courts, as well as a few from the domestic relations court. There were 140 men and 210 women. The following tables show offences for which they were arraigned in court and the mental condition found.

A few interesting points stand out in a comparative study of these tables. Take the record of the men offenders. We find that only 16%+ were mental defectives, while 35%, or more than twice as many, were psychopaths. Among the men offenders arrested for drunkenness there were 62 cases. Of these, 12.9% were mental de-

ANALYSIS OF 210 WOMEN'S CASES.

	Drunkenness.	Larceny.	Assault and Battery.	Offenses Against Chastity.	Vagrancy.	Stub. Child.	Threats.	Idle and Disorderly.	Profanity.	Vio. Drug Law.	Totals.	Percentage.
Ment. defectives	46	4		25	1	3	2		1	4	86	or 40.95%
Cons. psychos	29	4		2	1						36	or 17.14%
Sub-normal	11	12	1	15		2		4		2	47	or 22.38%
Dem. precox	3	3									6	or 2.86%
Epileptics	3	1		3							7	or 3.33%
Hysteria	2			1							3	or 1.43%
Al. hallucinosis	1										1	or .48%
Manic dep. insanity	2		1								3	or 1.43%
Sen. dementia	3										3	or 1.43%
Unclass. psychoses	3	2									5	or 2.38%
Normal	2	3		6						2	13	or 6.19%
	105	29	2	52	2	5	2	4	1	8	210	100.00%

fectives, while 40.3% were constitutional psychopaths.

From the domestic relations court there were 21 individuals arrested for non-support. Of these, 9.5% were mental defectives, while 66 2/3% were constitutional psychopaths. Apparently in the domestic relations court the problem of the mental defective is rather insignificant. The psychopath, however, looms up in large proportions.

A study of our women offenders gives an entirely different picture. Whereas there were only 16%+ mental defectives amongst the male offenders, among the female offenders there were 40.95% mental defectives. There were 35% constitutional psychopaths among the male, but only 17.14% among the female.

Of the women arrested there were 105 cases of drunkenness. Of these, 43.8% were mental defectives, and 27.62% constitutional psychopaths.

A study of those women arrested for offences against chastity shows that the mental defective is the serious problem; 48%+ were mental defectives, 28% were subnormal, while only 3.84% were psychopaths.

In general our studies bear out the conclusions of other investigators, in regard to women offenders, that they are differentiated from non-criminals by a lack of intellectual development, that mental deficiency is the problem here.

In regard to criminals as a whole, however, they contradict certain reports, for the psychopath is almost as frequent as the defective, and among men recidivists is of larger magnitude.

We conclude that there is a type of individuals passing through our courts who form a group of as serious proportions as the feeble-minded; who furnish as much if not more trouble to the social worker and probation officer than the defective, often suspected by the layman of being insane and diagnosed occasionally by experts as suffering from psychoses, or as mental defectives, defective delinquents, emotional defectives, moral imbeciles, and what not. These individuals when studied intensively by exact methods show no real defect in the intellectual field, they give no evidence of insanity, but seem to have certain anomalies of character, certain lack of personality adjustments; unstable, neurotic individuals, whose adaptation is inadequate and inefficient. They easily become disordered under the influence of emotion, alcohol, etc.

We have to consider these individuals in the light of adjustment of their personality rather than in terms of development of intellectual processes. Their antisocial conduct is due less to the stupidity of their ideas, less to their lack of understanding of the demands of a social organization and an inability to foresee the consequences of their acts, than it is to a lack of coordination of the proper mental faculties and a disturbance in the working of the proper mental mechanisms. The impulse to do a thing may come with such force as to drive out all opposing ideas, or the checking ideas may come into action too slowly, or may be permanently at fault. It is quite possible that these individuals belong to the same group as the neuroses and psychoneuroses, rather than defectives. And it is further quite possible, as Adler suggests, that our laboratory investigators are going to find some metabolic disturbances as a basis.

It is hardly necessary to call attention to the seriousness of the problem of the defectives and the proper social steps that need to be taken, inasmuch as now there is a wealth of literature on the subject. However, I am constrained to remind you of certain facts.

The public is getting the idea on the one hand that a majority of criminals are mental defectives. On the other hand, it is hearing that feeble-mindedness is incurable. So that the problem that faces society is to segregate all these defectives permanently. This is going to be a much contested point, and if the day of reckoning should come, would we be able to summon sufficient data to justify such conclusions? Are we convinced that all the evidence is in? On the contrary, we all know the last word has not been said from the standpoint of causa-

tion (and therefore of treatment). In fact, we have hardly touched on the subject from this side. Real scientific investigation of the question is only beginning, and we should be a little more cautious in speaking of the hopelessness of the situation.

As yet the pathologist and biochemist are to be heard from. The psychologist himself is going to dig a little deeper than merely classifying levels of intelligence. In fact, there is an immense field of research problems that will have to be worked out before any positive statements can be made.

In a series of 225 cases studied at the Psychopathic Hospital I called attention to the fact that 10% were specialized defectives, that is, their deficiency, instead of representing a halt in the stage of mental development corresponding to a certain level of mental age, was the expression of certain irregularities of mental makeup that consisted in a partial dropping out of some field of mental imagery.

Of the cases above referred to, 42 6/7% showed marked defect in auditory memory and imagery; 89% of whom measured so low in the scale as to leave little hopes of benefit from educative measures, the other 11% gave every evidence of being remediable.

The remaining 57 4/7% of this series showed defect in visual memory and imagery. Of these, 25% (two-thirds of whom were congenital syphilities) were very low in the scale and were distinctly unpromising: the other 75% showed excellent learning capacity in other fields than those having to do with visual imagery and memory, and showed every evidence of good capacity to profit by intelligently directed, intensive method of instruction.

The interesting situation was this: all of these individuals were distinctly backward children and members of classes of defectives. Our findings show that of those distinctly defective in auditory memory and imagery, 89% were apparently hopeless cases from the standpoint of education; but of those whose defect was in the visual field of memory and imagery, 75% showed every evidence of ability to profit by properly directed educative measures.

The lesson that we wished to call attention to was that there is a certain percentage of children in the schools showing one or other of these defects, whose extreme backwardness may be due to a defect in auditory word memory or visual word memory, etc. The defect may be partial or extreme, and their apparent level in the scale of intelligence will depend upon the degree of severity of the defect.

Those having the defect in the auditory field are much lower and more hopeless than those having such in the visual. Stearns' findings bear this out, in that those having auditory hallucinations show greater disturbance of consciousness than those having visual.

Educative measures might consist in making good the loss sustained from a certain field being in arrears by intensive work on others. For instance, in case of visual memory defect, one would pay special attention to the auditory, motor, vocal motor, etc.

If these findings are borne out by other studies we have an additional tool with which to wage our warfare against feeble-mindedness.

These and numerous other problems at the very root of crime are waiting to be attacked in our court laboratories that are going to be established; and for a long time yet knowledge of criminals will have to be handed out in teaspoonfuls rather than bucketfuls. There will be no room for the faddist or misguided enthusiast, for the work will of necessity have to develop slowly; but this is quite clear, that in the creation of just such laboratories in the municipal courts of our larger cities lies the road to the establishment of a rational and scientific method of dealing with criminals. "You must first find out what they are before you can successfully cope with them."

SOME THINGS THAT INFLUENCE THE MORTALITY AFTER PROSTATECTOMY.*

BY ARTHUR L. CHUTE, M.D., BOSTON.

IT is useless, in my opinion, to deny that the death-rate following prostatectomy is still high except in the hands of a relatively few people. If any one questions the accuracy of my statement, I would ask him to peruse the reports of some of the large hospitals. I will admit that some of these reports are very difficult to translate, that others are so filled with lists of donors and graduate nurses that there is no room for statistics of the medical work, but there remain other reports from which the surgical mortality can be computed. In the last reports of three well-known institutions the mortality following prostatectomy varied from 9% to 26%,—not a low mortality by any means.

Another thing that also points in the direction of a high mortality is the attempt to devise new ways to control hemorrhage that we have been hearing of lately. Unless men lost cases in which they felt hemorrhage had played an important part, they would not concern themselves on this score.

While mortality is not the only thing to be considered in cases of prostatectomy, I believe none will dispute me when I say it is the most important single consideration in dealing with these cases. Certainly unless we succeed in the prime essential of saving our patients' lives, we have accomplished but little.

The basis for the conclusions set forth in this paper is a series of fifty-eight consecutive pros-

* Read before the annual meeting of the American Association of Genito-Urinary Surgeons, at Stockbridge, Mass., May 16, 1914.

tatectomies that I have recently looked up with but a single death. You may say with considerable reason that fifty-eight cases makes too small a number from which to draw conclusions, since, in so small a series, a happy outcome or two or the reverse will change the percentage of mortality materially. It is my feeling that the low mortality in this series of cases depends, not upon chance, but upon the recognition of the great cause of mortality in these cases; that much the same things apply to this series of cases that apply to other series of equal size. In other words, that this was an average series of cases and that application of the same methods should give practically the same mortality in other series. These cases extend over a period of two years and have been done in hospital and private practice; a number even in the country, where their after-care had to be entrusted to men not particularly familiar with the care of such cases. I take the cases of this period for the reason that about that time I began to recognize what I now believe is the underlying, fundamental point on which mortality for the most part depends in these cases of prostatectomy.

To come to the point at once, I believe that the danger in prostatectomy lies almost wholly in the renal condition; that with good kidneys properly functioning, or even with rather poor kidneys that have been gotten into good functional condition, these patients get well in the vast majority of instances; one might almost say regardless of operation or operator. When, however, this principal danger—the renal condition—is not recognized or not attended to, we have a moderate number of patients who "peter out" from two to five days after operation and are supposed to die of shock, hemorrhage or exhaustion. It is my opinion that the vast majority of these patients really die of renal insufficiency, though they do not show signs usually considered to indicate this condition. At any rate, with the functional condition of the kidneys carefully looked-out for, these apparent deaths from shock, exhaustion and hemorrhage do not occur with anything like the frequency that they formerly did.

There are two renal conditions that may endanger the life of the patient who is about to submit to prostatectomy. The first is the renal suppuration, pyelo-nephritis. In these cases, when the kidney involvement, plus the degree of temporary disability due to back pressure, bring the patient's renal reserve down pretty low, the irritation of ether will often cause a fatal shutting down of the kidneys, which, because of its relative slowness, leads to the idea of death from exhaustion. If one has them in mind, these pyelo-nephritis cases are relatively easy ones to recognize and to guard against because they present an infected urine of low specific gravity, a distended bladder, and in the more advanced cases, digestive symptoms. In these cases it is easy to judge the amount of renal disability by estimating the phenol-phthalein output, the quantity of urea, the amount of albumin and such things.

The other type of case that is especially dangerous is the one where one has a chronically over-distended bladder with a non-infected urine. I have called this condition one of renal embarrassment and referred to it in a paper entitled "Some Observations on Cases of Prostatic Obstruction Presenting Over-Distended Bladders," that I read before the Philadelphia meeting of this society two years ago. These cases are much more dangerous than the others for two reasons: first, because they are very often overlooked on account of the lack of symptoms pointing to the kidneys; second, because they have not received the immunity granted by a chronic infection and almost any manipulation will be attended by infection. What these patients may show is simply a low gravity urine in large amount, usually with, but occasionally without, a little albumin. This large amount of low gravity urine is evidence of Nature's attempt to rid the organism of the usual amount of waste products with kidneys that are unable, because of the embarrassment of back pressure, to filter solutions of the usual concentration. The kidneys' situation is not unlike that of a water-wheel which is partially or wholly put out of service because of the level of water below the dam rising to the point where the wheel does not clear itself. Both water-wheel and kidney have plenty of potential power, which they could exert under more favorable circumstances.

These patients may have coated tongues and dyspepsia, and if the process is advanced, nausea, or even vomiting; but no edema, no headache, no blurring of vision, rarely renal elements in the urine. The blood pressure is not necessarily high. These patients are in condition where an ill-considered anesthetic may cause their kidneys to shut down. Following it they become dull and heavy, their tongues become dry, their abdomens often distend, and they gradually fail, dying in from two to five days of symptoms that it is easy to attribute to shock or hemorrhage if they come early, and exhaustion if they come late. The falling blood pressure seen in the latter part of the course of these cases, in conjunction with the greater amount of staining that we see in general with the suprapubic operation, would seem to add color to the probability of death from hemorrhage. Such deaths are, I believe, really due to renal insufficiency. At least, cases which start in this way may occasionally be gotten well by stimulating their elimination, sometimes even when they have gotten to the stage of soft distention and vomiting, and cases whose condition is similar may be prevented from developing such symptoms by proper pre-operative treatment. I have yet to see one of these patients die who was passing 80 to 100 ounces of urine daily. In the fatal cases, the quantity of urine, when definitely known, is always small.

As there is no point that we can say definitely

indicates the danger line, I feel we should treat all prostatics with a residual urine as though their kidneys were under suspicion. The very least we can do is to keep these patients under observation for several days prior to operation and make out definitely the quantity of urine and its specific gravity. If there is any indication that the renal function is not perfectly good, we should not consider operation till the kidneys have been gotten to function well.

It is upon the whole clinical picture that the decision of the necessity of bringing up the renal function must be made, and not upon a single sign. One does not like a low phenol-phthalein output; 30% in two hours, for instance, makes me apprehensive; a urine that has a constant low gravity and a slight trace of albumin is bad; a very large amount of low gravity urine is dangerous; worse than these things is a patient who has, in addition to the above, digestive symptoms in the shape of a coated tongue, lack of appetite, nausea, or vomiting. A high blood pressure, especially if there is but little evidence of sclerosis of the superficial vessels is ominous. These are points that make me particularly concerned, but all patients with a much distended bladder are risky, especially if the bladder has been symptomless. This is because the lack of discomfort means a lack of muscular tonicity of the bladder with probable dilatation of the ureters and embarrassment of the kidneys by back pressure. Patients who present uninfected urines are less favorable in a way than those who have been infected, since this latter class have developed a certain immunity which the former do not possess.

These prostatic cases with failing renal compensation or threatened failure of renal compensation are most satisfactory to treat—wherein they differ from the failing renal conditions of the medical type, where there is little to be done except to take off as much work as possible and perhaps drive the heart a little harder. We cannot in the chronic medical conditions hope for any real, lasting improvement in the condition of the kidneys. With these chronic back pressure cases, however, we may confidently expect a restoration of function that is equal to the amount of crippling that is due to the element of back pressure. This often amounts to enough to make the difference between passing through a prostatectomy or succumbing to it. One sees cases where, before operation, the specific gravity had been about 1010, or less, for a considerable time and where, some months after operation, the same patients pass a urine of a gravity of 1020 or more, showing a great gain in the kidneys' ability to excrete a concentrated solution of waste products. This is chiefly, if not solely, due to the relief of back pressure. The difference in these two conditions represents the renal disability that had been brought about by back pressure.

The principle to be followed in these cases is to relieve completely the back pressure. This is most definitely accomplished by opening the bladder suprapubically, and putting in a large-sized tube. I feel that this operation should be done practically always by means of local anesthesia, preferably novocaine. I have used spinal anesthesia for this purpose in a few instances, but do not do so routinely, because it is unnecessary. In my opinion, ether is not to be used, for if a patient's renal condition is sufficiently serious to require this manoeuvre, he ought not to be subjected to ether, because of its irritating action on the kidneys. My experience with chloroform and gas-oxygen anesthesia for this purpose has been nil—but I doubt if they are so desirable as novocaine. It is in cases where the bladder is over-distended with non-infected, low gravity urine that this preliminary drainage by suprapubic incision made under local anesthesia, receives its most urgent indication.

As a rule the ureters are dilated in these cases. I know of no way that one can catheterize such a bladder for any length of time without infecting it, and that, too, relatively early in the process. With the bladder infected, the intermittent backings up of urine between the periods of catheterization, if this is done at intervals, or at such times as the catheter blocks if constant drainage by catheter is attempted, allows the infection to extend up one or both ureters. We then have a pyelo-nephritis, the extent of which will vary, as will also its seriousness. Our best insurance against this is a large suprapubic tube, which will not allow of back pressure. In spite of this precaution, the infection of the bladder which is bound to occur, may extend up a ureter; but we have done our best to prevent it, and the time before infection takes place may be sufficient for the ureters to contract and reassume their protection of the kidneys. If the patient's urine has been infected for some time and there is no appreciable amount of temperature, the need of this preliminary suprapubic drainage is less; presumably infection of the kidneys has already taken place if it is going to occur, and a certain immunity has been developed. If, in such a case, we can keep the bladder empty by means af a catheter, and the retention catheter is well borne, the requirements for the relief of the back pressure are sufficiently well met. If, however, there is a turbid urine with temperature and perhaps renal tenderness, immediate suprapubic drainage may limit the extent and damage of the acute renal infection that has probably just taken place.

There is one incidental advantage of the preliminary suprapubic incision, even in the cases where it is not urgently indicated—it allows us to wall off the space of Retzus before the time of the chief operation; it causes a diminution in the congestion about the prostate with consequent diminished liability of bleeding—a prophylactic treatment of bleeding that I believe is desirable.

How long a time is required, after drainage of

the bladder has been established, either by suprapubic incision or by retention catheter, to get the kidneys into condition to do the prostatectomy? This varies widely with the case, also with the sort of anesthesia one proposes to use for the operation of enucleation. I have almost always waited a week and more often two—on one occasion recently I waited between ten and eleven weeks. One should wait until the patient is passing a good amount of urine and until his tongue has cleared up. If there is distention one should wait until this has disappeared. In other words, wait until all signs of urinary intoxication have ceased. If one is to use ether for the enucleation, I believe it is essential to wait longer than if one is to use spinal anesthesia. There is no limit to the time one may wait. I have, on a number of occasions, seen patients in the country in serious condition from renal insufficiency due to back pressure, have opened up their bladders under local anesthesia, and then left them for some weeks. At the end of this time I have either had them sent to me in town for the completion of the operation, or have done it at their homes.

The only objection to this procedure is the fact that the preliminary suprapubic drainage rather commits one to the suprapubic enucleation of the prostate. I find that I still prefer to do two-fifths of my prostates by the perineal route. The small fibrous prostate, the clearly malignant prostate or the prostate that suggests probable malignancy, the prostate in the very fat man—all these I believe the man who has acquired a reasonable facility with the perineal operation will prefer to do by that method. The suprapubic opening is, of course, no absolute bar to carrying out the perineal operation.

Having, by preliminary drainage, gotten the kidneys of a prospective prostatectomy patient into good condition, it is essential that we do nothing that may injure them. I believe ether is a great renal irritant, especially to these kidneys that are convalescing, so to speak, and avoid it if I possibly can in patients whose renal function has been poor. In its place I use spinal anesthesia with increasing frequency. I have used it thirty-nine times in this last fifty-seven cases. While I cannot say that I have never had disquieting experiences with it, I have never had a fatality and use it with growing confidence. The occasional threatening episodes during or following spinal anesthesia are preferable to the euthanasia that I believe ether not infrequently brings about with these patients.

Bleeding, which has, I believe, received more attention than it deserves, and is entirely secondary as a cause of mortality to the renal condition, comes in for consideration more especially in connection with the suprapubic operations. It may be that hemorrhage may be an important factor in the bladders that are distended with water by use of the constant irrigation apparatus following prostatectomy, due to the effect that the hydrostatic pressure may have in keeping open the mouths of bleeding vessels. I have always felt that it was unnecessary to control the bleeding by this method, and have never employed it. I have felt that it was pernicious in that it did not allow one to measure the amount of urine secreted—a thing that must be known in order to guide accurately the patient's convalescence immediately following operation.

I see patients at times who ooze very freely; once in a while I see them bleed more than I believe is good for them, but even then they do not die so long as they are passing a large amount of urine. Therefore I doubt if fatalities often depend upon excessive bleeding. While I am careful to avoid excessive bleeding, following operation, and have packed two, I think, out of this list of fifty odd patients, yet I cannot help feeling that moderate bleeding is more likely to be beneficial than detrimental, especially in the men who have a high blood pressure at the time of operation. I believe that relatively few patients bleed enough to do themselves great harm; that bleeding is rarely a cause of death following prostatectomy. I believe that the time spent in the complicated ways of arresting hemorrhage is worse than wasted. It prolongs the time of an operation, which one should make reasonably short; it also adds to the trauma. The importance of these last two elements is of course less when one operates under spinal anesthesia, but is, in my opinion important to avoid.

A method that I have employed when I have had a troublesome bleeding in suprapubic cases —one that takes but a few moments and has always proved effective—is to pass a good sized soft rubber catheter, say No. 18 or No. 20 into the bladder by way of the urethra. A styletted catheter may be necessary if there is difficulty of introduction. This catheter is sometimes fastened in place by a stitch through the meatus, but preferably by bringing its tip out the suprapubic wound and by passing a silk stitch through its end and then passing this stitch through the edge of the suprapubic incision. The stitch is tied with enough slack so that the eye of the catheter can be withdrawn well down toward the bladder outlet; then, with the catheter held securely in place, the prostatic cavity is firmly packed with gauze strips around the catheter as a core. This apposes the funnel shaped process or diaphragm, that is sometimes left at the bladder outlet after an intra-urethral enucleation, to the sides of the cavity from which the prostate has been removed. This method has, in my hands, never failed to control bleeding promptly and efficiently. It can be done rapidly and by touch without seeing the field. Dr. Lower* has in a recent article, described this method as a procedure which effectively prevents hemorrhage. I have never

* "A Technic for Performing a Shockless Suprapubic Prostatectomy," William E. Lower, Annals of Surgery, Feb., 1914. p. 279.

made use of it as a prophylactic measure, but believe it is better than the more elaborate measures if one is going to make routine use of some method of hemostasis.

If my contention is right, the high mortality following prostatectomy is unnecessary and is to be avoided in two ways: first, by getting kidneys that are not doing their work into a condition where they are acting efficiently; second, by avoiding injury to embarrassed or susceptible kidneys at the time of operation. According to my belief, the question of the mortality can be and has, in most instances, been settled, before one begins his prostatectomy. The question hinges almost wholly upon the condition of the kidneys, or perhaps, to speak more accurately, upon the functioning of the kidneys. The task of getting them into condition must be done before operation. A certain amount can be done after operation, but for the most part whether or not a patient is going to recover has been decided before we begin our prostatectomy and depends upon the renal function.

MAGNESIUM SULPHATE IN PURULENT CEREBROSPINAL STREPTOCOCCIC MENINGITIS.

HISTORY OF A CASE COMPLICATING ACUTE OTITIS MEDIA, COMPLICATED BY PARALYSIS OF EXTERNAL AND INTERNAL RECTI OCULI.

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IN the case of purulent streptococcic cerebrospinal meningitis here recorded, the treatment employed was so beneficial in its results, and those results were so encouraging—the patient recovering completely from the cerebrospinal meningitis, and living longer after the onset of the disease than in any other case hitherto reported—that the author is convinced the same method used in other cases might prove entirely successful in its final outcome. This assertion is based on the fact that the patient treated by the author succumbed in the end, not to the original disease, all symptoms of which had disappeared long before, but to complications which allowed repeated recurrence of local infection, and finally caused death through encephalitis.

The treatment consisted mainly of three things,—decompression, local drainage, and the internal use of magnesium sulphate, which last is, to the best of the author's knowledge, a new procedure in meningitis.

The patient was a man of twenty-two years, whose general health was good, and who had had no previous trouble with his ears. He was first seen by the author on the night of September 23, 1911, in the clinic of Dr. Robert Lewis of the New York Eye and Ear Infirmary. Ten days before admission to the infirmary he had been troubled by a pain in the left ear and by slight deafness, and when he entered Dr. Lewis' service he had already passed into a typhoidal state, with a temperature of 102 3-5°, a pulse of 56, and a severe headache, and showed stupor and slight delirium. When roused, he answered questions very slowly. His neck was rigid, there was no patellar reflex, only a slight *Kernig* reflex, and altered Babinsky sign. He evidenced descending optic neuritis of the left eye. An aural examination showed the left meatus edematous, full of pus, and very tender. The tongue was foul. The spinal puncture showed the spinal fluid under very high pressure, containing pus and cocci in pairs and short chains. An examination of the blood gave the following results: Red corpuscles, 5,200,000; white corpuscles, 18,000; *differential count,* small mononuclear 10%, large mononuclear, 5.6%, transitional 8%, polynuclear 83.6%. The urine showed neither sugar nor albumen, and the heart and lungs were normal.

At 7 P.M. of September 23, the patient had become noticeably worse since his admission to the hospital, and his condition appeared to be very critical. The typhoidal state was rapidly increasing, and meningitis symptoms were now marked. The eye grounds of both eyes showed marked choked discs; the rigidity of the neck had increased, and the pulse was only 40. The patient was comatose, but it was still possible to rouse him.

By 10 P.M. an immediate emergency operation for septic cerebro-spinal meningitis had become necessary. The operative field was prepared with tincture of iodine, and chloroform administered as the anesthetic. Then a curved incision was made, starting above and about one inch in front of the left ear, and extending backward to the tip of the mastoid. The muscles were cut, exposing the bone; part of the posterior and superior canal wall and roof of the tympanic cavity was removed, and also a part of the squamous portion for an area of about one and one-half inches in diameter. The sigmoid sinus was exposed posteriorly and opened; no thrombus was found, and the sinus wound was packed. A few granulations were found on the dura mater just above the tympanic cavity, while the dura mater itself showed board-like tension in the middle fossa, so an incision was made in the dura mater, immediately to relieve intracranial pressure, and for local drainage, whereupon the pulse-rate increased at once and improved somewhat in quality. A double pectoral saline epidermiclysis of 1200 c.c. was given. Wet dressings were applied to the wound, and soon afterward, a saline proctoclysis was given to the patient, and was repeated at intervals of three hours. Much fluid, chiefly isotonic saline solution, was administered by the mouth. The patient passed from the anesthetic into a comfortable sleep without rousing. An examination of smear of ear pus showed pneumococci, and of the mastoid pus, streptococci.

2nd Day. On the following morning the patient's mental condition was bright; he showed no discomfort, and was both hungry and talkative. A watch was heard in his left ear 1/60. A cerebral hernia protruded about half an inch, and the cerebrospinal fluid drained freely. Proctoclyses were continued, and the patient drank a great deal of milk, of water, and magnesium sulphate solution. The patient was urged to drink as much as possible magnesium sulphate well diluted.

4th Day. On the fourth day, the dressings were found to be contaminated by pyocyaneous infection, and the cerebral hernia showed incipient necrosis. The wound was wiped with bichloride of mercury solution, dusted with chinosol, and a saline wet dressing applied. The enemata were continued, as was also the internal use of the magnesium sulphate solution.

5th Day. On the fifth day, the wound was clean and sweet.

7th Day. On the seventh day, *all symptoms of the meningitis had entirely disappeared,* and the patient's mentality was very keen. A mild degree of facial paralysis on the left side was noted. There was a little cerebrospinal leakage, and the wound was slightly purulent; therefore it was wiped with corrosive sublimate solution, and dressed with aluminum and lead acetate wet dressing. The patient continued to drink much magnesium sulphate solution.

8th Day. On the eighth day, the wound having become suspiciously dry, gas and ether were administered, and the mastoid operation was thoroughly completed. Then the sinus packing was removed and an alcohol wet dressing applied. The smear from the mastoid wound was found to contain streptococci.

12th Day. On the twelfth day, the patient was up and dressed, felt very well, and had begun to recover his appetite. He drank a large quantity of magnesium sulphate. The wound had granulated well, and was narrowing, though there was still some slough adherent.

13th Day. On the thirteenth day, the cerebral hernia had decreased very much, but the deeper layers of the wound were suppurating, the pus containing streptococci. An alcohol wet dressing was applied. Although the patient had a good color and appeared very well, except for the unhealed wound, he complained of double vision—due to insufficiency of the left external rectus—and the left facial paralysis seemed more marked. He continued to take much magnesium sulphate through the mouth. The blood count on this day was as follows: Red corpuscles, 4,900,000; white corpuscles, 18,000; differential count, small mononuclear cells 20.8%, large mononuclear cells 1.6%, transition cells 2.8%, polynuclear cells 75%.

FIG. 1.—Hernia on 13th day.

27th Day. On the twenty-seventh day, there was a sudden rise in the patient's temperature, he had a severe headache, and vomited a great deal. The facial paralysis was worse, and the left eye, which closed the day before, now would not quite close, and the same eye had a slightly choked disc. All over the wound was a membranous exudate. The lumbar puncture produced a turbid fluid under moderate pressure, containing pus cells, but no organism by cultures. Saline enemata were administered to the patient every two hours, and an increased amount of water, and two ounces of magnesium sulphate were given him through the mouth, but he could retain nothing, and his nutrition was poor.

29th Day. On the twenty-ninth day, the patient's general condition was much better. An aluminum and lead acetate dressing was applied to the wound, and the patient was given one-half ounce of magnesium sulphate during the day.

FIG. 2.—Diagram of wound on 29th day.

41st Day. On the forty-first day, the patient was doing well. The hernia had disappeared, and the wound was clean.

FIG. 3.—Diagram of wound on 41st day.

43rd Day. On the forty-third day, the wound was still smaller, but the patient had an epileptiform convulsion with an aura of "whizzing in the head like taking an anesthetic." He continued to drink magnesium sulphate well diluted, consuming one-half an ounce during the day.

44th Day. On the forty-fourth day, the patient felt very well. The wound was almost dry, but a

microscopic examination of the discharge showed considerable pus and an occasional coccus.

50th Day. On the fiftieth day the patient did not feel so well. The wound was suppurating, and the lower jaw was drawn strongly to the right, to a distance equal to the width of two incisor teeth, by the contraction of the right, and paresis of the left, masticatory muscles. One dram of magnesium sulphate was administered to the patient three times during the day.

61st Day. On the sixty-first day, the patient experienced a second epileptiform convulsion, which was, however, shorter than the previous one. The tension in the wound had increased.

62nd Day. On the sixty-second day, the wound had contracted, and looked completely healed, except for considerable cerebrospinal drainage. Amidoazotolulol salve was used as a dressing. The patient was given one dram of magnesium sulphate three times during the day.

68th Day. On the sixty-eighth day, the epidermitization was complete. One-half an ounce of magnesium sulphate was taken internally by the patient.

72nd Day. On the seventy-second day, the patient was seized with a third epileptiform convulsion, which was, however, slight. The patient said that this time an aura of color appeared before his right eye only, whereas in the last convulsion it had appeared before both eyes. The discs of both eyes were choked, more markedly so in the left. The left pupil was much larger than the right.

76th Day. On the seventy-sixth day, the wound surface was necrosing, and the cerebrospinal fluid oozing considerably. The patient was pale and thin; he no longer cared to help about the ward as he had done hitherto, and could not even read without fatigue. He was aphasic for nouns—a condition which lasted one day only—and was also very deaf, suggesting word deafness. Half an ounce of magnesium sulphate was given him during the day.

79th Day. On the seventy-ninth day, the hernia was larger, and had taken on the appearance of a malignant tumor with erosions on its surface and invading the neighboring skin flaps. There was a leakage of cerebrospinal fluid with a little pus. The wound was wiped with mercuric chloride in alcohol.

FIG. 4.—Hernia on the 82nd day.

82nd Day. On the eighty-second day, the wound was nearly epidermitized, and though there was copious cerebrospinal leakage, there was very little pus. The patient, however, felt severe pain in the wound and down his neck. He was given two doses of magnesium sulphate, half an ounce at one time, two ounces at the other.

98th Day. On the ninety-eighth day, the patient's left facial paralysis was total, he had a severe headache, experienced intensely loud tinnitus and flashes before his eyes at the same time, and at night felt faint. There was some serum and blood from the wound, but no pus. The hernia had increased 25% since the day before, and there was much serous leaking. A specimen of the tumor for histological examination proved to be only granulation tissue. The patient was given one dram of magnesium sulphate.

101st Day. On the one hundred and first day, the hernia was large, and sloughing, with a cadaveric odor, and was in appearance a malignant granuloma; induration reached from the outer angle of the left eye to the lower wall of the meatus, with nodules below the ear posteriorly in the neck. The granuloma was invading the healthy tissues and the skin, and no healthy granulations were visible. The lumbar puncture produced 33 c.c. turbid, flocculent, stringy cerebrospinal fluid under great pressure. There were many polynuclear cells, but no germs in the smear, and the cultivation was negative. The jaws and face of the patient were much twisted to the right. He had edema of the right eyelid and had a severe paroxysm of pain in the left eye, and severe pains in the head. A tincture of iodine dressing was applied to the wound, from which there was free drainage. The patient was given two ounces of magnesium sulphate.

129th Day. On the one hundred and twenty-ninth day, the patient was *not* up and dressed, the first occasion in a very long time. The wound was dirty and foul.

145th Day. On the one hundred and forty-fifth day, the patient was weak, nauseated, complained of pain in both eyes, and was discouraged at last; he looked pale, sallow, and cachectic. The fungus hernia was large, although cleaner. The appearance of a malignant granuloma invading the skin was intensified, and much more tissue was involved than recently. Two drams of magnesium sulphate were administered to the patient every four hours.

152nd Day. On the one hundred and fifty-second day, the wound was clearing, and the patient was much better and more comfortable. His condition about this time varied considerably; one day he would show improvement, and the next he would be worse again. It was noted that he had seemed either inattentive or else very deaf for a week or two past.

162nd Day. On the one hundred and sixty-second day, the patient was weaker. From the time, *three weeks earlier,* when he had first been given alcohol to stimulate his appetite, he had lost more rapidly.

167th Day. On the one hundred and sixty-seventh day, the wound was green, and the granuloma very large. The patient was weak and indifferent, dozed all the time, seemed extremely deaf, and spoke very slowly at long intervals. For ten days past his speech had been growing unintelligible, like sensory aphasia, and inarticulate, like motor aphasia. His mind, however, was perfectly clear, although slow. He found no trouble in swallowing, but could retain little nourishment, as there was considerable vertigo, nausea, and vomiting. He also had a severe headache.

169th Day. On the one hundred and sixty-ninth day, the patient was better again. He began to pick up interest, and to talk, but though his words were, as usual, chosen correctly, his speech was almost unintelligible from faulty muscular action; in talking he did not move the muscles of his face or mouth at all, and scarcely moved his tongue. He was also very deaf. On the other hand, the left facial paralysis had been improving for several days, and he could now close his left eye tightly.

171st Day. On the one hundred and seventy-first day, the wound was very foul and green, with considerable cerebrospinal leakage. The external and internal recti muscles of the left eye were weak, paretic, and irregular in action, and the same eye showed marked strabismus, while both eyes had a spontaneous nystagmus to the right. On this day the patient ate nothing at all. He was in a very drowsy state, sleeping most of the time, though answering questions readily. This drowsiness had been gradually increasing for three weeks past.

173rd Day. On the one hundred and seventy-third day, the wound was dirty, the fungus granuloma extending over the edges of the wound on all sides, under the skin, and under the posterior half of the zygoma. The left auricle was pushed down to the angle of the jaw. There was noticeable rigidity of the neck. The patient was slightly comatose.

175th Day. On the one hundred and seventy-fifth day, the patient left the hospital, and went home. He was comatose, but not profoundly so.

179th Day. On the one hundred and seventy-ninth day, the patient was reported to be better than on leaving the hospital.

186th Day. On the one hundred and eighty-sixth day, the patient was reported comfortable. His jaw now shuts tight and even. Facial movements perfectly restored.

190th Day. On the one hundred and ninetieth day—March 30, 1912—the patient died.

SUMMARY OF CASE.

Diagnosis, as cerebrospinal meningitis, established by symptoms and lumbar puncture.

Decompression operation gave immediate relief from intracranial pressure.

Toxemia combated by magnesium sulphate water and drainage.

Cure of the cerebrospinal meningitis follows in a few days. Infection of the cranial wound follows contamination of the dressings. Result, a recurrence of toxemia together with encephalitis, with death on the 190th day from time of decompression operation.

Cause of death, encephalitis and toxemia, *not* cerebrospinal meningitis.

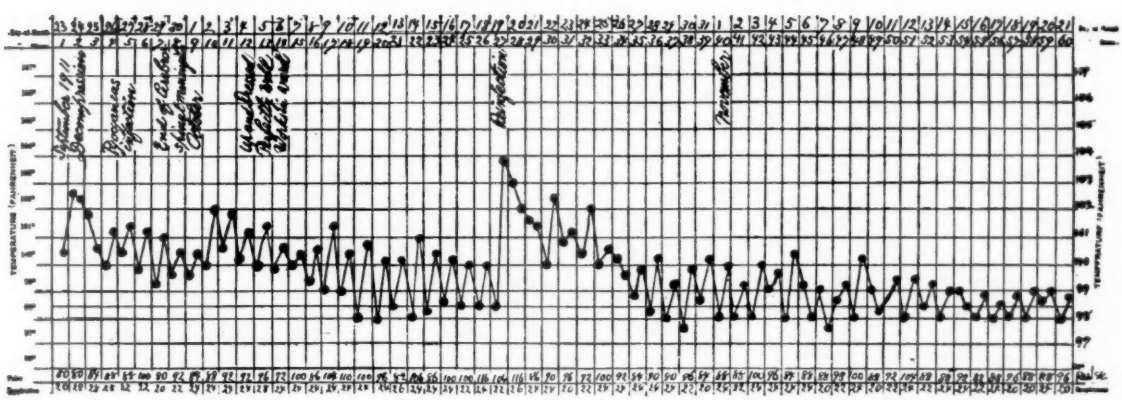

Fig. 5.

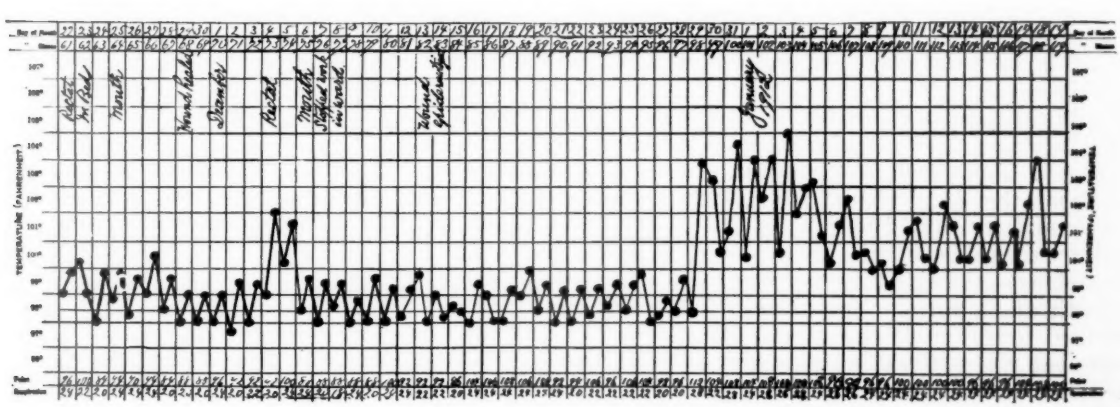

Fig. 6.

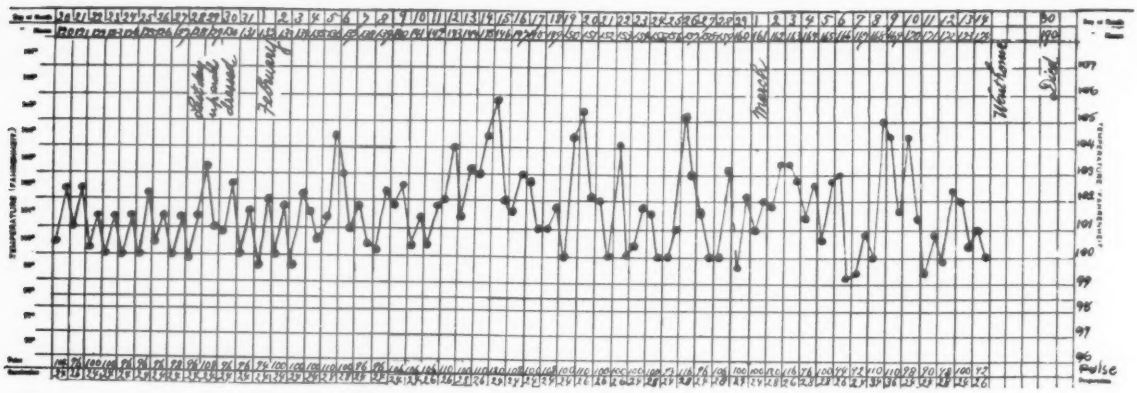

FIG. 7.

FIGS. 5, 6 and 7.—Daily, morning and evening, maximum, minimum records.

THE MODERN TREATMENT OF AMEBIC DYSENTERY.

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Assistant Surgeon, United States Military Prison, Fort Leavenworth, Kansas.

AMEBIC dysentery has become endemic in the United States. Holt[1] states that "reports to the Surgeon-General of the Public Health Service show its presence in numerous localities in this country. It has been reported in California, Oregon, Washington, Idaho, Georgia, Arkansas, Indiana, Ohio, Massachusetts, Maryland, Pennsylvania, Michigan, Illinois, North Carolina, Texas, Alabama and New York. Reports of other observers indicate the presence of the disease in a number of other localities." In our island possessions it has been known to exist for years. Giffin[2] of the Mayo Clinic reported that during a period of two and one-half years the stools of 1700 patients were examined, in 79 of which the Entamœba histolytica was demonstrated. In the 79 cases in which the entamoeba was demonstrated, the patients came from the following states: Minnesota, Iowa, North Dakota, South Dakota, Nebraska, Wisconsin, and Montana. Only a very few of these patients had ever traveled in the South, and without doubt contracted the disease in their home locality. Jerome Wagner[3] states that over one hundred cases have been seen at the New York Polyclinic Hospital in the last twelve years. From the above it is readily seen that amebic dysentery becomes a disease of importance to every practicing physician and the diagnosis and efficient treatment of this malady should be well known.

Many drugs have been used in the treatment of amebiasis, the chief among which are: ipecac, bismuth and quinin. Varied results have been obtained by different observers with each. The treatment was tedious, relapses and deaths were frequent, and on the whole no drug gave satisfactory results. In March, 1911, Vedder[4] of the Army Medical Corps, published his experiments undertaken to test the efficacy of the ipecac treatment in dysentery. These experiments brought emetin to light as the potent factor in the treatment of amebic dysentery. Rogers immediately began to treat all of his cases of dysentery (where the entamœba histolytica was the causative organism) along the lines laid down by Vedder. The reports of the wonderful results obtained by Rogers in India are well known to all. While in North China in 1912 it was the writer's good fortune to have the opportunity to observe several cases of amebic dysentery that were being treated with emetin hydrochloride. The European physicians of that locality were loud in their praise of emetin, and it seemed no less than miraculous that patients who had the entamoeba histolytica demonstrated in their stools, should be up and about their work while receiving the treatment, have no uncomfortable symptoms from the drug, the stools return to normal frequency and consistency in three or four days, while the active amebas disappeared in a like period in a large percentage of the cases. In all, four cases were closely observed for a period of four months; all were acute cases and there was no relapse during this time. Frequent microscopical examinations of the stools were made, and in no case were active ameba found after treatment. In Manila, P. I., in 1913, through the courtesy of Captain A. T. Cooper and Lieut. E. A. Anderson of the Army Medical Department the writer was able to observe and compare the results that were obtained with bismuth subnitrate and emetin in the treatment of amebic dysentery. The acute cases under bismuth did poorly and the chronic ones went from bad to worse; and, in one instance, the disastrous results of the bismuth were clearly demonstrated at autopsy. It had coated the majority of the amebic ulcerations, and by so doing had bottled up the entamoebas, which had burrowed deeper into the intestinal wall and finally caused multiple perforations. The only ulcers that had perforated were those that had been sealed with a layer of bismuth. Bismuth will temporarily stop the pain in amebic dysentery by coating the ulcerations, thus preventing the passage of the intestinal contents over raw

and excoriated surfaces; it will cause the disappearance of blood in the stools for the same reason; and lastly, will cause the periodic disappearance of the entamoebas from the feces due to the coating of the ulcers, in which the greater percentage of the amebas are located. Many have claimed excellent results from this drug in the treatment of dysentery, but I have never seen bismuth subnitrate or any other form of bismuth "cure" a case of dysentery where the etiological factor was the entamoeba histolytica. The results obtained with emetin were remarkable. Many of the cases were chronic in character, but their response was rapid. A large number of the cases had failed to respond to various lines of treatment given at their post hospitals, and had been transferred to the Division Hospital, prior to their being returned to the United States; many of these cases after receiving the emetin treatment, instead of being "invalided home," returned to their stations in a far better physical condition than they had been for years

Jerome Wagner[3] of New York has recently reported excellent results obtained from the use of emetin in amebic dysentery.

G. W. McCaskey[5] reported in February, 1914, a case of amebic dysentery of thirteen years' duration cured by emetin hydrochloride.

Lyons[6] reports six cases of amebic dysentery in which emetin hydrochloride was used with successful results in five.

Major Hartsock[7] of the Army Medical Corps states that his experience with three cases where emetin was used was very satisfactory, the effect was prompt, but one case necessitated a repetition of emetin after a month. One case developed an amebic hepatitis, which promptly subsided under treatment with emetin.

Holt[1] of the Public Health Service states that the results were favorable in six of his cases treated with emetin, and believes that in emetin we have our most powerful weapon in the fight to control amebiasis. He further states that reports are at hand from 17 officers of the Public Health Service relative to the use of emetin and none are unfavorable.

The writer desires to report four cases. Case 1 has been under my personal observation for 18 months, Case 2 for nine months, and Case 3 for four months. Case 4 has been heard from at frequent intervals for a period of 18 months and states that there has been no abdominal pain or discomfort, the stools have been normal in frequency and consistency, and there has been a marked gain in body weight.

CASE 1. Mrs. H., aged 26. Had been in the tropics two and one-half years; absolutely well during this time. In September, 1912, was taken with abdominal pains and frequent stools containing blood and mucus. She lost ten pounds and became very anemic. Circumstances made it impossible for a microscopic examination of feces at this time. Ipecac was given with moderately good results. Pain ceased and stools became practically normal in consistency. In October, 1912, the patient had another attack similar to the one stated above; examination of the stools at Tientsin, China, failed to show the presence of amebas. It was advised that bismuth subnitrate be used; poor results were obtained from this treatment. For two or three days there would be an apparent improvement, then a relapse to former condition. This kept up until January, 1913. By the latter part of January the patient had lost nearly twenty pounds, looked anemic, was exceedingly weak, and was having three or four bloody stools a day. Examination of the stools made by Captain T. D. Woodson at the Division Hospital, Manila, P. I., and confirmed by myself, showed the presence of *entamoeba histolytica* in large numbers. The patient was admitted to the Division Hospital, Manila, about February 1, 1913. She retained ipecac very poorly. Bismuth subnitrate was used with no results. Emetin hydrochloride (Merck) was begun about February 10, used hypodermically in one-fourth grain doses, two injections a day, night and morning, until three grains had been taken. At the end of this time an opposite condition existed from a dysenteric one. The patient was up and about the third day after emetin treatment was stopped, and left the hospital on the fifth day. There was a slight recurrence one week after leaving the hospital. Two one-half grain injections of emetin were given. All symptoms cleared up immediately. There has been no relapse up to this date (Sept. 17, 1914). Weight is normal, no anemia, and no pain is present, the stools are normal, and the patient states that she never felt better. A total of four grains was used in this case. No entamoeba can be demonstrated in the stools.

CASE 2. Sergeant, Prison Guard, Military Prison, Fort Leavenworth, Kansas. Aged 40. Had amebic dysentery in May, 1903, while stationed at Ormoc, P. I. Had from 12 to 16 stools daily, containing much blood and mucous. Was given quinin irrigations at Ormoc and First Reserve Hospital, Manila, P. I., until June 15, 1903. No beneficial results from the irrigations. The patient was transferred to the General Hospital at Presidio of San Francisco, Cal., in June, 1903. Weight 138 pounds. Received quinin irrigations and olive oil internally. Received this treatment until February 24, 1905, when patient was returned to duty markedly improved. Had gained in weight from 138 to 196 pounds, but was still having frequent "loose" stools, as described above, with a moderate amount of pain. Felt weak, but never came on sick report during this time. On December 27, 1913, the patient had a severe hemorrhage from the bowels. He was found unconscious on the floor of his home. Subsequent examination of the stools showed the presence of the *entamoeba histolytica*. Emetin treatment was begun at once. One-third grain doses, one injection in the morning, a double dose at night. Five grains were used, covering a period of five days. Patient gained rapidly. At this time (September 17, 1914), he is eleven pounds heavier than he has been since 1903, and also says that he feels better than at any time since 1903. There has been not a sign of a relapse. Eats everything. Stools normal for the first time since 1903. A few encysted ameba have been demonstrated in his stools at various times since the emetin treatment.

CASE 3. Private, Hospital Corps. Age 21. Contracted amebic dystentery in June, 1912, at Camp Petieus, Alabama. Was treated with bismuth subnitrate with poor results. Was admitted to the Walter Reed General Hospital, Washington, D. C., in July, 1912. Remained a patient there for 41 days. Bismuth subnitrate given during this time. Felt better on discharge from hospital, but frequent stools containing large amounts of mucous continued. Blood appeared at frequent intervals. In February, 1913, received a course of ipecac treatment at the United Stated Military Prison Hospital, Fort Leavenworth, Kansas. Moderate improvement followed the ipecac. In February, 1914, was given the emetin treatment. One-third grain doses, one injection in the morning, a double dose at night. Normal stools began three days after first injection of emetin. Patient has gained in weight, and states that he feels perfectly well. No entamoeba can be demonstrated in the stools.

CASE 4. Miss M., aged 34, a school teacher, has been in the tropics six years. In 1909 had amebic dysentery, quinin irrigations was the only treatment given at this time. Since 1909 has had three or four attacks, each lasting from four to six days. In the latter part of February, 1913, she had another attack of "diarrhoea," which had lasted about two weeks when I was called to see her. She asserted that this attack was due to eating a certain fruit, which she said, always brought on her trouble. Examination of the stools showed the presence of *entamoeba hystolytica* in large numbers. Emetin treatment was begun at once, one-half grain doses being used, one injection night and morning. Five grains were used in this case. All dysenteric symptoms cleared up immediately. Patient gained weight and was looking much better on my departure from the Philippines in April, 1913. Word received from this patient in May, 1914, states she has had no recurrence, and is in excellent physical condition.

An analysis of the four cases given above shows that one was acute and three chronic. In chronic cases all observers agree that we should not expect as good results as when treating acute cases. One of the cases has been carefully followed for 18 months, and there has been no relapse. One has been followed for nine months, one for three months, and the other reported as in excellent health. Cases 1, 2 and 3 have been under my constant observation since the first injection of emetin was given. It would appear, therefore, that emetin acts well in chronic cases, and I believe that it is in these chronic cases that emetin will show its most wonderful therapeutic action.

Some have objected to emetin on account of the relapses that have occurred. Relapses occur in syphilis, after treatment with mercury and salvarsan, and in malaria, after treatment with quinin, yet will these same physicians hesitate to use and praise the latter named drugs? The wonderful results obtained by Rogers, in India, with emetin, both in acute and chronic cases, is enough in itself to commend this drug as the drug "par excellente" in the treatment of amebic dysentery. To these results must be added the reports in this country, which show equally as good results. If emetin should in time prove itself of no more value (as shown by the after-results of treatment) than ipecac, it should still be regarded as the drug of choice. Those who have had experience in administering the ipecac treatment, know only too well how much pain and discomfort are done away with by the use of emetin. Laboratory workers (Craig, Nichols, Vedder, and others, tell us that a large percentage of the cases treated with emetin continue to harbor amebas in an encysted form. It seems then that the entamoebas that are not killed or driven out of the intestinal tract during emetin treatment are stimulated to encystment and thus rendered harmless to their host. However, the cases that continue to harbor the entamoeba in an encysted form are *"Carriers"* of the disease, and thus are a danger to the public health. It would seem, therefore, that in order to complete the treatment of amebic dysentery, that some form of irrigations should be used. Quinin irrigations have proved of value in the treatment of amebic dysentery, and it seems as if their use in conjunction with emetin would reduce the number of *"Carriers"* of this disease, and form its modern treatment. Before condemning emetin as a potent factor in the treatment of dysentery, one should make sure of the causative organism, for in the bacillary form of dysentery emetin is useless. The recent works of Captain Charles F. Craig,[8] Medical Corps, U. S. Army, relative to the classification of amebas are both exhaustive and easy of comprehension, and should be read by all who are interested in the parasitic amoebae.

I wish to express my thanks to Major Kent Nelson, Medical Corps, U. S. Army, Surgeon at the United States Military Prison, Fort Leavenworth, Kansas, for the opportunity to present this paper. Also, to Captain Charles F. Craig, Medical Corps, U. S. Army, for valuable assistance.

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Clinical Department.

INTESTINAL PUTREFACTION WITH CONVULSIONS.

By W. L. Thompson, M.D., New York.

The spectacle of a five-year old child with high-grade intestinal putrefaction, stupefied with bromides under the hasty assumption of epilepsy, is not a particularly strong encomium of diagnostic skill. The case in point is so fraught with interesting and instructive features as to render its report of value.

History.

The patient, I. J. S., a boy of six years, was brought to me in November, 1913, with a history of "convulsions."

Past History. Birth normal, without instruments. Chicken-pox at 3½ years. No family history of insanity, epilepsy, or other neuropathy. When two years old (several weeks after the convulsions first appeared), the child fell from a tree a distance of six feet, striking his head on the ground; there was no loss of consciousness or other untoward symptom. His general health always excellent, and mentality good.

Present Illness. At the age of two, while in apparently good mental and physical condition, the patient began having attacks of dizziness in which he would stagger and sometimes fall. These attacks occurred at first only during waking hours, increasing in severity until the typical symptom-complex was established.

Spasmodic movements of the arms and legs (most marked, however, in the arms) were accompanied by congestion of the face, gurgling expiration through clenched teeth, and rigidity of the neck and body. The child occasionally fell to the floor, but never lost consciousness. The duration of each seizure was very short, "not more than a minute, even the severest ones," to quote his mother. The attacks gradually increased in frequency, varying from 10 or 12 to 40 or 50 in the course of twenty-four hours. Night attacks, during which the parents were awakened by the child's stertorous breathing, have been common, but of short individual duration.

There has been, apparently, no mental delinquency, the boy being unusually bright in school and active in play.

The only respite from these convulsive seizures has been when deeply drugged with bromides—as much as 122 grains per day having been administered by one physician over a long period.

To quote the patient's mother: "Nine different physicians were consulted at various times; only one called it 'epilepsy,' one said 'it looked like it,' while the others 'did not know' but agreed 'it looked like epilepsy, and would result in that in time if not stopped.'"

Physical Examination. Well-developed and well-nourished boy of six. Mental alertness above normal. No deviation from normal in conformation of cranium, oral cavity or its adnexa. Visual and auditory powers acute. Skeletal frame well-proportioned. Thoracic and abdominal viscera showed no signs of abnormality. All reflexes normal. The only feature of interest in the physical examination was the occurrence of hair upon the lower legs.

A visit to the home afforded confirmation of the reported convulsions. During the visit of a half-hour's duration, the child had two convulsive seizures. While seated in a chair, marking upon a slate, the patient suddenly became rigid, though remaining in the sitting posture and retaining hold of the slate. The eyes became fixed, but not rotated, the complexion dusky red, the breath emitted in forcible, prolonged, gurgling expirations between clenched teeth. There was no frothing at the mouth, no outcry and no warning of any sort. Slight clonic convulsions began in the arms and legs, torso stiff, neck rigid, eyes fixed, sitting posture still maintained. During the height of the convulsion, which lasted not more than two minutes, I spoke to the child, calling him to walk over to me; this he did at once, with a jerky, precipitous series of movements, the other phenomena, as first noted, being still present. At the expiration of the seizure the child looked up, smiled, and went back to his chair and resumed his play. In the course of ten or fifteen minutes, this performance was repeated.

Diagnosis.—Although the diagnosis of epilepsy has been unqualifiedly made by some, and tacitly agreed to by others of the nine physicians who had been consulted in the preceding four years, the lack of family history of any neuropathy, the preservation of unusually sound mental and physical health, the absence of many of the stereotyped phenomena of epilepsy (aura, outcry, stigmata, biting of tongue, loss of consciousness, etc.) and the great number (as many as 50 in a day) and the mild character of the convulsions, impaired the validity of this assumption.

Predisposing causes of constitutional origin, producing nutritional disturbances of the brain, such as rickets, anemia, syphilis, malnutrition, or any recent or remote acute infectious disease presented no objective evidence.

Exciting causes, such as direct irritation of the cerebral cortex from tumor, general or localized pachymeningitis, embolism, thrombosis, etc., could be excluded.

Likewise, reflex irritation from renal or intestinal colic, retention of urine, phimosis, possible depressed fracture of the inner table of the skull from the fall recorded in the child's history, and even persistent thymus were considered but received no confirmation from physical examination.

A normal, healthy appetite for food, without nausea, vomiting or distress after eating, eliminated any gastric disturbance.

Freedom from flatulence and abdominal pain and tenderness, with regular daily dejections of normal size and consistency, effectually disposed of the presumption of enteritis.

There was no evidence of intestinal parasites.

Bearing in mind the instability of the nerve centres, so characteristic of infancy, and the preponderance of intestinal disturbances in provoking involuntary discharges of nerve force from

these unstable cortical motor centres, Metchnikoff's hypothesis was assumed and the cause of the symptom-complex sought in the large intestine.

Urinalysis revealed the presence of the sulpho-conjugate ethers in disproportionate amount. The conjugate, or ethereal, sulphates eliminated by the urine, being the accepted index of the intensity of the putrefactive process, it is apropos to review their origin and significance. The sulphuric acid in the urine is derived from albuminous material—both native and ingested proteid. While the greater portion of the sulphuric acid in the urine is found in the form of mineral sulphates, about one-tenth of the total amount is in combination with aromatic substances belonging to the oxy-group (salts of phenol, indoxyl and skatoxyl). Indoxyl and skatoxyl are derived from indol and skatol, which, together with phenol, are formed during the process of intestinal putrefaction, their amount increasing and decreasing with the degree of putrefaction, and hence are a direct index of its intensity. The total amount of sulphates excreted in twenty-four hours in the urine of a normal individual varies between 2 and 3 grammes, the ratio of the mineral sulphates to the conjugate or ethereal sulphates (salts of phenol, indoxyl, skatoxyl) being as 10 of the former to 1 of the latter.

Treatment.—Urinalysis having revealed the presence of abnormal quantities of indoxyl and its congeners, thus establishing the diagnosis of proteid putrefaction with its consequent toxemia as the cause of the convulsions, the treatment further confirmed the diagnosis.

As a preliminary measure, proteids were excluded from the diet, and a combination of the phenolsulphonate of zinc with cascara sagrada given at four-hour intervals for five days. The convulsions, which numbered forty on the day treatment was begun, had now diminished to twelve per day. On the morning of the sixth day, one-half ounce of magnesium sulphate in hot water was administered, followed by the same dose at noon; on retiring, the patient was given 5 grains of thymol in a small piece of bread, followed the next morning by another half-ounce of magnesium sulphate. During this time, and until the bowels were completely evacuated (a period of 36 hours), all food and drink, except teaspoonful doses of water, were interdicted. When the bowels had been completely emptied of the thymol, the patient was allowed his usual diet, with meats, however, restricted to a minimum. He was at once started on a bi-daily dose of lacto-bacilline (a suspension of lactic-acid bacilli in pure culture), and urged to drink freely of buttermilk.

The convulsions rapidly diminished in number, and in five days from the administration of thymol (ten days from the beginning of treatment), had entirely disappeared, nor has there been a single instance of recurrence in the succeeding seven months.

SUMMARY.

The salient features of this instructive case are worthy of enumeration.

1. The great number (50) of the convulsions per diem; their mild character; their brief individual duration (1 to 2 minutes); their occurrence for 3 consecutive years.

2. The preservation of unusually sound mental and physical health.

3. The rapidity and completeness of the cure, following thorough sterilization of the intestinal tract.

4. The preservation of the sterility thus obtained by acclimatization of the lactic-acid bacillus.

5. Confirmation of Metchnikoff's contention that the large intestine, by reason of putrefactive processes occurring there, is the chief portal of entry to the system of profoundly toxic substances.

This remarkable case is of value not alone for its illuminating clinical features, but as a commentary on the diagnostic deficiencies unfortunately all too common in the work-a-day world of medicine.

If Osler's sound advice, "When in doubt, examine the rectum," were more often applied to our therapy, to the end that many obscure symptom-complexes be presumed to originate in the intestine and treated upon this assumption, we might be less frequently guilty of such gross and oft-repeated error as illustrated by the past experiences of this child.

TWO UNUSUAL TRAUMATIC CASES.

REMOVAL OF BULLET FROM ATLAS; AND PUNCTURE OF THE RECTUM BY THE AXLE OF A BABY CARRIAGE.

BY FRANK H. LAHEY, M.D., BOSTON.

THE two following cases are, I believe, sufficiently unusual and interesting to warrant their publication.

CASE 1. A boy of eight, while sleeping, was shot by a demented parent, the bullet entering the left side of the upper jaw just above the left second incisor. It penetrated the hard palate at about its junction with the soft palate and entered the posterior pharyngeal wall, embedding itself somewhere in the neck behind this point.

The wound in the lip was cleaned up as well as possible at a nearby hospital, and the next day a stereoscopic x-ray was made Dr. Ariel George and the boy transferred to the Deaconness Hospital.

The x-rays, Figs. 1 and 2, showed the bullet lying just inside the posterior arch of the atlas on the left side, and just behind the groove for the vertebral artery.

An immediate operation was not undertaken on account of the amount of slough in the mouth, from the wound in the palate, and because there were no symptoms relative to the bullet itself.

FIG. 1.

FIG. 2.

At the end of three days, when much of the slough had separated, the child was etherized in the face-downward position, and a curved incision, extending from just below the external occipital protuberance nearby to the mastoid, was made. This incision was deepened through the neck muscles, in a way similar to the suboccipital decompression approach, until the posterior arch of the atlas was reached. The incision was then carried through the left lateral occipito-atlantal ligament until a small blackened area of tisue was found surrounding the bullet, which lay, as shown by the x-ray, inside the posterior arch of the atlas on the left side and just behind the groove for the vertebral artery. Until a good grasp had been obtained on the bullet with toothed clamps, its withdrawal was a little difficult on account of its being wedged beneath the arch and because of a few sharp projections on the bullet made by its journey through bone. A rubber dam drain was laid into the wound leading from the situation of the bullet to the lower angle. The muscles were sutured with chronic catgut and the skin with silkworm gut. Recovery from the operation was uneventful, the temperature reaching normal in a few days. There was a slight discharge of sero-purulent material from the wound for a few days after withdrawal of the wick, which was done on the fourth day. The child was kept flat on his back and not allowed to move his head for two weeks. He was discharged from the hospital on the twentieth day. The wound was solidly healed, but there was considerable stiffness of the neck, particularly for backward movements of the head and rotation from left to right.

The child was seen again tweny-seven days after leaving the hospital, and was able to move his head much more freely, but still had some limitation of motion in the directions spoken of above.

The child was seen a few days before publication of this article and now has every motion in his neck.

This case is interesting when one considers that a bullet entering the bony canal of the cord in front between the base of the skull and the atlas, was extracted from this canal in the rear, yet no injury to the cord was apparent.

CASE 2. A boy eleven years of age was seen during the course of my service at the Haymarket Square Relief Station, with the following story: The boy states that he was playing with part of an old baby carriage, consisting of an axle with one wheel attached; states that he had been rolling the wheel along with the other end of the axle grasped in his hand and that after doing this for some time became tired and decided to sit down, using the wheel as a seat, and the axle as an upright. He accordingly inserted the end of the axle, not occupied by the single wheel, into the ground and seated himself on the seat made by the upturned wheel on the opposite end of the axle. On sitting down he felt something suddenly enter his anus and rectum, suffered a sharp pain in the abdomen, and fell to the ground, thereby extracting the axle, which had pushed its way through the hub of the wheel and accurately entered the boy's anus, with no external wound to indicate its entrance, excepting a slight laceration of the mucous membrane over the external sphincter.

On examination there was found a well-developed and nourished boy, nauseated, pale, sweating, and in some shock. Pulse, 108. Respirations, 20, and shallow. Other than this his general physical examination was negative except for some tenderness on deep pressure between his umbilicus and pubes.

Rectal examination showed a slight abrasion of

the mucous membrane over the external sphincter and a laceration of the rectum, three-fourths of an inch long, two inches above the internal sphincter, on the anterior wall.

Operation was advised and accepted by the child's parents.

Operation at the Haymarket Square Relief Station. Ether.

A median incision three and one-half inches long was made between the umbilicus and pubes, the peritoneum opened, and the abdominal contents examined. Free faeces were found in the pelvis, emerging from a perforation of the rectum on the anterior wall, just at the point of reflexion of the bladder peritoneum onto the rectum. Several abrasions were found on the small intestine and an abrasion of the parietal peritoneum over the sacro-iliac joint. The wound in the rectum was sutured with Pagenstecher and a cigarette drain carried down to it, the abdominal wound being closed in layers. On account of the wound in the rectum being extra-peritoneal, and to guard against an extra-peritoneal accumulation, a second cigarette wick was carried up from below, through the ischiorectal space beside the rectum, to the repaired hole.

The recovery was uneventful except for a slightly fecal discharge for a few days after the withdrawal of the abdominal drain. Twenty-one days after the operation the child left the hospital with his wounds completely healed.

There is no comment to be made on this case, its chief interest being the unusual form of the accident.

A CASE OF ROTARY DISLOCATION OF THE ATLAS.*

BY JOHN J. MORTON, JR., M.D.,

Fellow, the Rockefeller Institute for Medical Research.

A REVIEW of the literature covering various forms of dislocation of the atlas reveals that the condition is by no means a rare one. There are on record at least 14 uncomplicated cases of the rotary type and many others associated with fracture either of the odontoid process or arches of the atlas. E. M. Corner[1] published his excellent article, "Rotary Dislocation of the Atlas" in the *Annals of Surgery* for 1907. He reviewed the nineteen known cases, both complicated and otherwise, and gave a comprehensive treatise on the anatomy, etiology, diagnosis and treatment of the condition. A second important contribution was made by Mixter and Osgood[2] in 1910. Their paper, "Traumatic Lesions of the Atlas and Axis," consisted in a report of seven cases, five of which were rotary in nature. In his monograph in 1910, Wittkop[3] treated the dislocations of the atlas, and devoted a section to rotation luxations. He considered four cases of the latter form. Beside the main articles, single cases have been added by Taylor,[4] Brooks,[5] Christovitch,[6] Kocher,[7] Eisendrath,[8] Pilcher,[9] and Kienboch.[10] Several of these, however, must be regarded as a combination of forward and rotary dislocations.

The following case, a rotary dislocation of the atlas, is reported because of two unusual factors,—aphonia, and the presence of an accessory cervical vertebra.

On May 26, 1914, J. O., a boy of 12, was admitted to the Peter Bent Brigham Hospital, complaining of pain in the back and inability to raise the head from a bowed position on the left shoulder. Three days previously he was wrestling with a much larger boy and was twisted violently towards the right while his head was caught rigidly between his opponent's legs. Immediately following this, the head was bent to the left shoulder, and could not be brought back to the midline. He complained of severe cervical pains which prevented him from sleeping during the next two nights. Directly after his injury the boy could not speak aloud. He had considerable difficulty in swallowing, and took nothing but liquids in the way of nourishment.

On examination he was apparently suffering much pain, responding only feebly in a scarcely audible whisper to questions asked him. His head was twisted far to the left, bowed down with the left cheek resting on the shoulder and practically fixed in this position. He held his left hand against his forehead constantly as a support and cried out with pain if it was removed (Cf. Fig. 1). Passive motion of the head caused extreme pain. The spines of the axis, seventh cervical and first thoracic vertebrae were prominently felt and there was a depression just below the occiput. The transverse processes of the atlas could not be palpated in the normal position on either side. The mouth could not be opened sufficiently to permit an examination through the pharynx. An irregularity in the heart action was noted, there being an extra beat at about every fifth systole. There were no cardiac murmurs. The reflexes were all active with a quick response, and much exaggerated on both sides. Ankle clonus and plantar stimulation gave suggestive reactions although not typical for an upper segment lesion. There was no disturbance in sensation and no difference in the power of the muscle groups of the extremities.

The x-ray exposure from a lateral position revealed a "displacement between the atlas and axis with no evidence of fracture of the odontoid but suspicion of the anterior arch of the atlas." The plate also showed the presence of eight cervical vertebrae (Cf. Fig. 2). It was impossible to obtain a good antero-posterior view on account of the difficulty in opening the mouth.

On May 29, under deep anesthesia, an attempt was made at reduction of the deformity. Examination at this time revealed a prominence on the right side of the pharynx on a level with the soft palate. This lump was considered to be the transverse process of the atlas. No similar projection was palpable on the left side of the throat. When full relaxation was obtained the head was extended on the body and gently rotated toward the right. At the same time an assistant pressed upon the above noted prominence, which, however, did not completely disappear on restoring the head to its normal position. The head came to the midline easily without a catch or click of any kind. A crinolin bandage passed around the head, neck and chest was used to maintain the presumed reduction.

* From the Surgical Clinic of the Peter Bent Brigham Hospital.

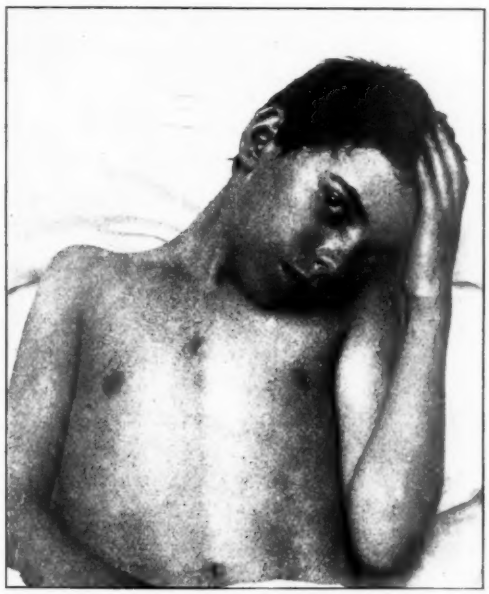

FIG. 1.
Patient on entry. Note the bent position of the head and the use of the left hand as a support.

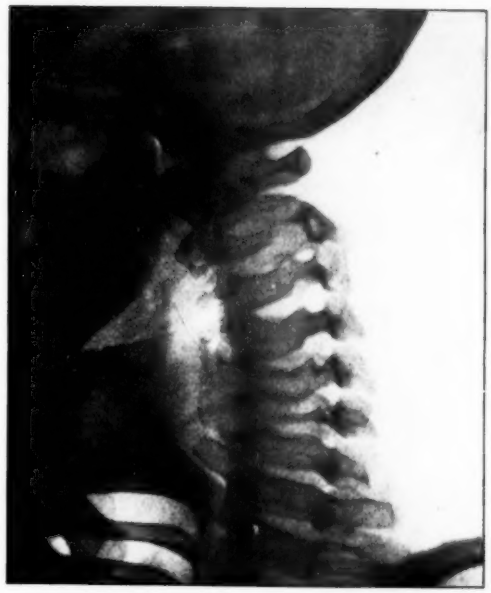

FIG. 2.
X-ray picture, lateral view before reduction. Note the position of the left transverse process of the atlas; the impinging of the right lateral mass of this bone on the odontoid process; the intact odontoid; and the extra cervical vertebra.

FIG. 3.
Lateral view after reduction,—the atlas is in good position.

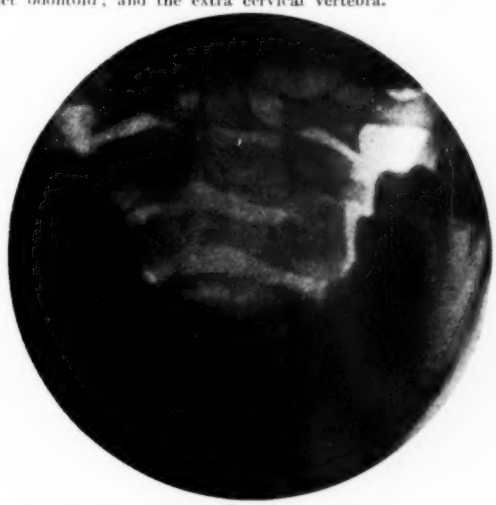

FIG. 4.
Antero-lateral view after reduction; the odontoid and anterior arch of the atlas are intact; the atlas is in good position.

FIG. 5.
After reduction, showing head turned to other side, normal rotation.

FIG. 6.
After reduction, no limitation in movements of head.

On return of consciousness, the pain had disappeared and normal phonation was restored. At the end of the second week the cast was removed and free passive motion of the head was possible without restriction or pain. A second dressing was applied and after another week the boy was allowed to go about the ward without a supporting bandage.

Roentgen examination on June 2, in lateral and antero-posterior positions, showed the atlas and axis in normal relation with no evidence of fracture of the arches of the atlas or of the odontoid process (Cf. Figs. 3 and 4).

There was absolutely no limitation in the motion of the head, as can be seen in the photographs (Cf. Figs. 5 and 6) taken just before his discharge from the hospital. Thorough examination gave no evidence of sensory or motor disturbance,—phonation was normal, but the heart action remained irregular as noted on entry. There were no subjective complaints.

The features of special interest in the case were the aphonia and the presence of an extra cervical vertebra. In other respects the picture was typical of the condition as pointed out in Corner's[1] paper.

Aphonia has never been reported as a symptom of rotary luxation, though it has been observed in cases of other dislocations of the atlas and in dislocation of the upper cervical vertebrae. Küster[11] in 1884 described an interesting case of forward dislocation of the atlas with fracture of the odontoid. In this case there was aphonia for nine months, followed by a gradual return of voice. Walton[12] mentioned some impairment of speech in two cases of dislocation of upper cervical vertebrae in 1889. Law[13] in 1912 called attention to a case of backward dislocation of the atlas with hoarseness as a symptom. In these cases the aphonia was probably due to direct embarrassment of the vagus in its course. In the case here presented the same possibility holds, although we should also consider a purely psychical origin. In support of this it is only fair to state that the patient was under a trying emotional strain which was augmented by the hysterical attitude of his mother. The rapid disappearance of the aphonia after reduction may or may not be of significance, as even two weeks later the boy preferred to whisper although he could easily speak aloud if urged. He was unable to do this on entry.

The presence of an extra cervical vertebra has never been noted in previous cases of rotary dislocation. The accessory vertebra may well have been a contributing factor in the production of the lesion.

Supporting the head was a characteristic feature of Bayard's[14] case, 1870—a rotary dislocation with fracture of the odontoid. Here the hand was held as a prop under the chin, the position constantly maintained for nine months till artificial support was given. Silver's patient (reported by Mixter and Osgood[2]), also suffering with a rotary dislocation of the atlas, steadied his head with both hands whenever moved about in bed. In cases of anterior dislocation reported by Pilcher,[9] Albee[2] and Black,[15] the same tendency to use the hands to prevent motion of the head was displayed.

The reports of Corner,[1] Mixter,[2] Pilcher,[9] and others show that difficulty in opening the mouth or trouble in swallowing has frequently been observed. This is probably due to embarrassment of the upper cervical nerves as pointed out by Corner. The characteristic is also very common in the forward atlas dislocations, there being a long list of these cases in the literature.

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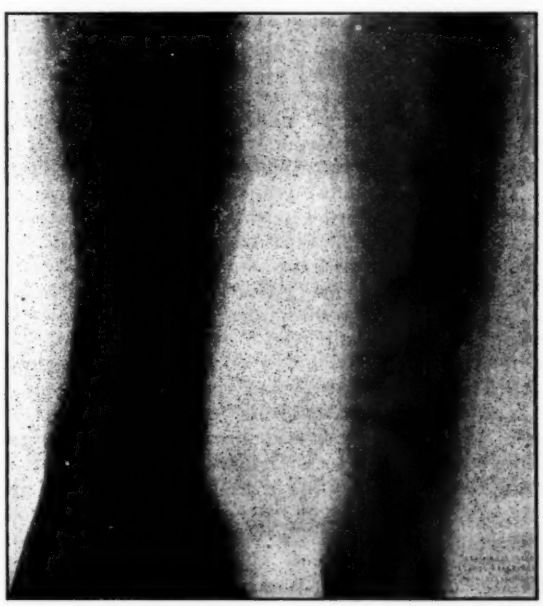
THE SHAFT OF THE RADIUS AS A PIN CUSHION.

BY H. F. R. WATTS, M.D., DORCHESTER, MASS.

A woman of 30, coming down stairs, carrying sewing materials, fell and injured her arm. Some time later it was observed that there was an abnormal something, palpable, under the skin of the forearm, which moved with pronation and supination. Closer observation established that it was firmly connected with the radius and moved with it.



Five weeks after the injury the patient was referred to me for x-ray examination.

As the plate very prettily shows, the radius is nearly transfixed by a broken needle driven squarely into the shaft of the bone.

The condition is interesting from a mechanical no less than from a clinical viewpoint.

Reports of Societies.

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

STATED MEETING, WEDNESDAY, OCTOBER 7, 1914, AT 8 P. M.

The President, Dr. James C. Wilson, in the chair.

THE CLINICAL INTERPRETATION OF THE WASSERMANN REACTION WITH SPECIAL REFERENCE TO CHOLESTERINIZED ANTIGENS.

DR. JAY F. SCHAMBERG AND DR. JOHN ALBERT KOLMER.

THE main purposes of the communication are:—

1. To study further the antigenic value of cholesterinized alcoholic extracts of normal heart as compared with alcoholic extracts of syphilitic liver and acetone—insoluble lipoids.

2. To study with particular care those cases reacting only with cholesterinized extracts and negatively with other antigens in order to determine the specificity of the reaction with cholesterinized antigens.

3. To study the question of weak positive reactions with cholesterinized extracts and serums of persons who deny syphilitic infection and who present no evidences of the disease.

4. To study the value of the Wassermann reaction performed with cholesterinized extracts as a control in the treatment of syphilis.

The following conclusions are given:

1. Cholesterinized alcoholic extracts of normal heart constitute more sensitive antigens in the Wassermann reaction than alcoholic extracts of syphilitic liver and extracts of acetone insoluble lipoids. The latter extracts are superior to alcoholic extracts of syphilitic liver and rank second to the cholesterinized extracts in antigenic sensitiveness.

2. Of 41 cases reacting only with cholesterinized antigens no less than 20 were known definitely to be syphilitic and in at least 14 the diagnosis of lues was not probable. What is of greatest importance is the fact that if these extracts had not been used, either a diagnosis of syphilis would not have been made, or treatment would have been interrupted before spirochetal activity had ceased.

3. We are of the opinion that cholesterinized extrects are best employed in conjunction with non-cholesterinized extracts in performing the Wassermann reaction, and very slight positive reactions with the cholesterinized extracts should be interpreted in conjunction with a clinical study of the patient. With a person known to be syphilitic these slight reactions are to be interpreted as positive and as an indication for further treatment.

4. The large number of negative reactions with cholesterinized antigens and the serum of persons in good health or those known to be suffering from non-luetic conditions, is evidence that false positive or pseudo-reactions with these extracts are rare.

5. In using cholesterinized antigens it is not advisable to work with single units of complement and amboceytes because of the well-known anti-hemolytic properties of the cholesterin, and the corresponding increased likelihood of obtaining false reactions.

6. Cholesterinized alcoholic extracts of heart are easily prepared and are quite stable. It is advisable, however, to retitrate them at frequent intervals, as is usual with other antigens.

7. Cholesterinized alcoholic extracts of human heart are probably better than those of beef and guinea-pig heart. The latter extracts are particularly prone to become anti-complementary.

8. Cholesterinized extracts constitute the best antigens when the treatment of syphilis is being guided by the Wassermann reaction, because they are most delicate and serve to indicate spirochetal activity after the reactions with alcoholic extracts of syphilitic liver have become negative.

DISCUSSION.

DR. B. A. THOMAS: I think it worth while to present the other side of this important subject. In view of our experience on 3,000 Wassermann reactions in which in a certain proportion of cases—only a few hundred in number—a comparative study has been made with respect to the two antigens, alcoholic extracts of syphilitic liver and cholesterinized extracts, we have come to place greatest reliance upon the syphilitic liver extract as number one in importance and the cholesterinized antigens as number two. Our recent work with cholesterinized extracts as compared with the syphilitic liver extracts has been confirmatory of results previously reported by Dr. Ivy and me. In our comparative tests we found that the cholesterinized extracts gave apparently a more "delicate" reaction than the extract of syphilitic liver, but we also found that many weakly positive results were obtained by the former in non-syphilitic cases. This last fact alone is quite sufficient in our opinion to offset any advantage in delicacy of the reaction obtained with the use of cholesterinized extracts. We feel that just as high a percentage of positive results is obtained in known or clinically apparent syphilitics with a good syphilitic liver extract as with the cholesterinized antigens, and we do not get positive results with non-syphilitic sera. This is doubtless due in part to the use of one unit of complement and amboceptor properly standardized instead of double or triple units as employed by many workers. We must conclude that with cholesterinized antigens, weakly and medium positive, and occasionally strongly positive reactions, may be obtained in many conditions other than syphilis, and in normal persons. While our experience with the use of cholesterinized extracts is limited, and we have no criticism to make of the commendable experimental studies being carried on for the improvement of the Wassermann technic, we regard the employment of these artificial antigens for routine clinical use at the present time, a distinct step backward.

DR. SCHAMBERG (closing): Dr. Thomas admits the greater sensitiveness of the cholesterinized

antigens as compared with the alcoholic extract of syphilitic liver. He claims, however, that with these antigens one obtains frequently positive reactions in normal subjects. That is the important point for discussion. The reading of our communication with the case histories will demonstrate that in a large series of patients known to have had lues, the occurrence of positive cholesterin reactions with negative reactions with the ordinary antigens, indicated the persistence of the infection. Dr. Kolmer and I believe that when we have 50% fixation of complement with the cholesterinized antigens we may definitely assert the existence of syphilis. When we come to that small group of cases in which we have a reaction weakly positive with cholesterinized antigens and negative with the alcoholic extract of syphilitic liver, we have a group concerning which it is impossible to speak dogmatically. We do not assert that these patients are luetic. On the other hand, we are not in a position to state that they are not luetic. It would be hazardous to state absolutely that there was no syphilitic infection in an individual because of the absence of obvious symptoms.

CASES ILLUSTRATING MODERN BONE AND JOINT SURGERY.

DR. ASTLEY P. C. ASHHURST: Although modern methods in bone and joint surgery have been gradually developed during the last 20 years, it is only within the last five years that what may be described as modern bone and joint surgery has begun to exist. The new procedures have been made possible largely by the perfection of aseptic technic, and may be discussed under the headings of: (1) Treatment of Fractures; (2) Treatment of Ankylosis, and (3) Bone Transplantation. The treatment of fractures is becoming almost a surgical specialty, and most of the bad results are due to ignorance or carelessness in treatment. The cases herein reported are illustrative of the work now being done and I trust they may stimulate the interest of the profession in a class af patients too often neglected, or in whom the most favorable time for operative correction is allowed to pass before the surgeon is consulted.

(The following cases are reported in detail.)

CASE 1. Fracture of surgical neck of left humerus impacted in bad position. Reduction under anesthetic. A young and healthy adult in a fall of 30 feet sustained in addition to the above mentioned injury, fractures of the left radius and ulna above the wrist, and a fracture of the left femur below the trochanters. The impaction at the shoulder was broken up by manipulation, the fractured ends reduced and a suitable dressing applied. To meet the outward rotation of the upper fragment, the arm was dressed in abduction. Within two weeks the fractures of the humerus and forearm had united and union was progressing in the femur. If sufficient reduction is not possible by manipulation under an anesthetic and with all the aids known to surgery, it is proper to resort to open operation.

CASE 2. Fracture of the shaft of the left femur, irreducible without operation. Fixation by plate. Result: no shortening; free motion in the knee (75 to 180 degrees).

CASE 3. Unreduced Colles's fracture of the right radius. Absolute disability, not relieved by subcutaneous osteotomy. Resection and plating. The normal contours of the articulating surfaces have been restored. Within five weeks after operation the woman could oppose her thumb easily to all the fingers and had some power of grasping in the hand.

CASE 4. Malunion of bimalleolar fracture at the right ankle. Absolute disability. Resection and screw fixation. Ability to walk without pain at the end of two months.

CASE 5. Ununited fracture of radius and ulna. Fixation by bone transplant and steel plate. Operation to remedy non-union 16 months after original injury. The radius was resected until healthy marrow was exposed and then plated. The ulnar fragments, the gap between whose ends could not be bridged without sacrificing an undue length of the radius, were united by a transplant, cut from the ulna higher up.

In the treatment of ankylosis the modern operation of arthroplasty (by interposition of fat and fascia flaps), enables the patient to secure not only much greater stability at the elbow and shoulder than was secured by excision, but even at the knee and hip a fair degree of motion may be secured without impairment of stability. The operation, however, is difficult. Possibly 50% of successful results in arthroplasty of the knee may be considered satisfactory. One case is reported in which this operation was done at both knee and elbow for ankylosis. Free motion was secured in the elbow and fair motion in the knee three months after the last operation and the patient was able to walk without crutches upon leaving the hospital.

One case is reported of bone transplantation for tuberculosis of vertebrae with the ultimate result of inconspicuous deformity and perfect health of the child. One other case, myeloma of radius with excision and transplantation of bone is reported. The present condition is that of firm union of the transplant to the shaft of the radius, rotation in the forearm through an arc of more than 90 degrees, flexion in the wrist to 140 degrees and extension to a straight line with increasing grasping power in the hand. Much might be said of the treatment of dislocations by arthrotomy, reefing of the capsule, etc.; of the treatment of osteomyelitis by excision of the diaphysis and of the treatment of paralytic flail-joints by the production of ankylosis, all of which are operations of value.

DISCUSSION.

DR. JOHN B. ROBERTS: The growth of bone surgery in regard to fractures, the reconstruction of ankylosed joints and transplantation of bone has been so exceedingly satisfactory in the last few years that it is almost like a revelation. The medical men must agree that many fractures ought to be treated only by surgeons, because surgeons alone are the medical men who have the experience, judgment and technic to operate upon such cases in a modern aseptic operative way. I am of the opinion that many fractures are operated upon by plates, screws and wires that would not need to be, if a surgeon saw them early, and if after he did see them, he used the care and scientific skill of the gentleman who has reported these cases tonight. I am convinced that Lucas-Championniere was correct in teaching that fractures should be treated by the early application of moderate massage—light stroking to relieve spasm and pain—followed by early passive and active mobilization with a moder-

ate amount of support, in some cases with splints, but with their early rejection. Most medical men have not followed the teaching of Championniere because he was perhaps somewhat extreme in his views. Mr. Lane, who has done so much for surgery, I am inclined to believe, has been driven to an extreme in operative work with plates, because his colleagues in his own country and possibly in others, have adhered too much to prolonged immobilization of fractures, and as a result have neglected the care of the soft tissues and have had bad anatomical and bad functional results. In my own work I have, as have many American surgeons, adopted early massage with passive and active mobilization of the French authority in part, and have resorted to open fixation advocated by the English surgeon already mentioned only in selected cases. There are two extremes and one must pick his cases as Dr. Ashhurst has so admirably shown us tonight. There are border-line cases, however, many of which will do as well by one method as the other, if handled by competent surgeons and the after treatment be not relinquished to inexperienced cubordinates. There is a large number of fractures which must of necessity be seen by the general practitioner and it is fortunate that many of these can be treated by non-operative means. Others should, whenever possible, be placed under the care of surgical specialists.

DR. G. G. DAVIS: I think Dr. Ashhurst has chosen well to characterize the subject of his paper as a contrast of the work in bone and joint surgery of the present with that of the past. The attention of the general surgeon has been so concentrated upon the more brilliant and radical forms of surgery that the field of bone surgery has been ignored by many. I am glad to see that there is one rising man who recognizes, and takes advantage of the opportunity presented in the treatment of bone and joint defects. Before saying what should be done in an operative way in these cases the surgeon must know also the possibilities in non-operative treatment. I need not point out that the field is one of the most highly attractive because of its great possibilities and the opportunity for the exercise of the skill and ingenuity of the surgeon.

DR. ASHHURST, closing: I have had two deaths in cases of transplantation of bone for tuberculosis of the spine. The first patient died of pneumonia. This was not the fault of the operation, but probably the fault of the anesthetist. I also had one patient who died of tuberculous meningitis some six weeks after operation. But we often see patients with tuberculosis of the bones, who develop meningitis when lying quietly in bed in apparently good general health, and in whom no operation has been done; and if meningitis occurs after operation there is no proof that the operation is the immediate cause.

FRACTURE OF THE CAPITELLUM HUMERI.

By DR. JOHN H. JOPSON.

DISCUSSION.

DR. ADDINE HEWSON: A point of great interest in fracture of the capitellum is the relation of the supinator radii brevis muscle. This muscle arises from the outer condyle of the humerus and the orbicular ligament of the elbow and partly from the upper part of the lateral border of the ulna and from the surface beneath the lesser sigmoid cavity of that bone. Its fibres pass obliquely downward and forward (the ventro-manad) diverging as they go and are inserted in the dorsal lateral anterior surface of the radius, curving around that bone. It must be borne in mind that the insertion of this muscle will extend as far as the middle of the shaft; also that the muscle is a composite one, a portion of it being derived from the superficial extensor layer and the rest from the deep layer of the muscle of the forearm. It is, therefore, self-evident that when the arm and forearm are placed in the Jones' position, the head of the radius being in the capitellar fossa, the fractured capitellum may be placed in its position and from the relaxed condition of the muscle, no tension is placed on the ligaments surrounding the bone involved, and consequently, the radius in this Jones' position would hold the capitellum in place.

DR. N. GINSBURG: In a case which Dr. Roberts and I have just seen at the Polyclinic Hospital, the x-ray plate showed a picture which seems to correspond to that which Dr. Jopson has shown. We felt that the case might possibly be one of epiphyseal separation because the child was only two or three years of age. We were unable to secure flexion of the elbow joint. Under ether anesthesia the arm was placed in acute flexion, much force being required to accomplish this. There was no history of injury. The case was originally brought to me for a cellulitis of the humeral region which was opened and drained. Our feeling at first was that the case was one of periarthritis, but the x-ray plate seems to show an injury similar to that which Dr. Jopson has described.

Book Reviews.

A Text-Book of Pathology. By J. GEORGE ADAMI, M.A., M.D., F.R.S., and JOHN MCCRAE, M.D., M.R.C.P. (Lond.). Second edition, pp. 878. Philadelphia and New York: Lea and Febiger.

This book was favorably commented upon in a review in this JOURNAL last year. The second edition is considerably improved. The new chapter on the more important infections and their "outstanding features" is excellent and includes the most recent work, for instance, that on streptococcus infections, endocarditis, whooping cough, Hodgkin's disease, streptothricosis and syphilis. These are not the only subjects in this chapter, which virtually contains a résumé of all the infectious processes. The many new illustrations are carefully chosen and are unusually good. In this new edition each chapter is headed by a table of contents which is to be commended for the assistance it will give the students in coördinating the contents. The first edition was favorably commented upon for its concise and logical presentation, and this comment can be heartily endorsed for the new edition.

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THE EPIZOÖTIC OF FOOT AND MOUTH DISEASE.

IN another column of this week's issue of the JOURNAL we publish the official statement of the United States Department of Agriculture relative to the present epizoötic of foot and mouth disease among livestock in this country and its relation to human health, especially in the matter of contamination of milk.

There has been considerable unprofitable discussion in the daily press as to the origin of this epizoötic and the responsibility for its occurrence and treatment. The infection was first reported in Niles, Mich., on August 23, by Dr. W. T. Graham, a veterinary of that city. On August 26, Dr. C. W. Dunphy, the state veterinary at Lansing, Mich., was notified of the infection, and on September 3, after investigating the cases, reported the situation to the United States Bureau of Animal Industry. Local attempts to control the infection proved unavailing, and on October 13 Dr. V. G. Houck was sent by the United States Bureau of Pathology to take charge of the situation. Progressive state quarantines were now instituted, keeping pace with the spread of the infection until the present time, when its extension appears to be under control.

There is a possibility that the infection was first introduced into this country in a shipment of hides from Argentina. Dr. Patrick H. Mullowney of the Boston Board of Health has expressed as his opinion, that the outbreak was originally due to the contamination of hog cholera serum with the virus of foot and mouth disease, as is alleged to have been the case in the outbreaks of the disease in 1902 and 1908. The latter explanation, however, seems unlikely, and, whatever the origin, the chief point of importance now is the control of the epizoötic.

On November 14 the disinfection of the Chicago stockyards was completed and the yards were reopened for business on November 16. On November 14, also, the disease was discovered in a herd of cows at Hartford, Conn., which was strictly quarantined. This was the first appearance of the infection in that state. On November 15 two new foci of the disease were discovered at Worcester, Mass., and others at Lynn, Hingham, and Maynard, Mass. Orders were issued for the killing of eighty infected cows on this day, making a total of 450 condemned since the outbreak of the disease. On November 15 the United States Secretary of Agriculture published, in the Boston daily press, the following statement of the policy of his department in dealing with the disease:—

"The Bureau of Animal Industry has not reversed its policy on the foot and mouth disease. It is actively pursuing its general policy of quarantining and destroying diseased animals and also of destroying exposed animals where there is any danger.

"Instructions permitting the slaughtering of exposed animals for food purposes where there can be no danger of spreading the disease are of necessity of limited application and are rigidly construed. Such cases must be reported to the bureau before this action can be taken.

"The bureau will not permit the slaughtering anywhere of exposed animals for food purposes where there can be any possible question. The department finds it can make available a larger amount for eradication work than was first thought possible, and will strain its resources to the utmost limits under the law.

"It is likely that its funds, taken in conjunction with those of the states, will hold out until Congress meets, but under the law governing deficiencies the department can expend only what has been appropriated to it for work in this field and cannot expend money in excess of such available funds, and, especially, cannot create a deficit by spending money for the destruction of cattle and the compensation of owners.

"The law specifically governs the matter of the creation of deficits by heads of departments and clearly defines the conditions under which a deficiency may be created and the expenditure which may be incurred in creating such deficits.

"Instruction to inspectors not to permit the destruction of livestock in any one herd in excess of $200 in value without reference to the bureau is simply a matter of business necessity for checking and accounting. It causes no undue delay and does not impair the efficiency of measures."

On November 16, new cases of the disease were discovered in Orleans County, New York; at Glendale, Mont.; and at Hartford, Conn. Federal quarantine was, therefore, extended over the states of Connecticut and Montana, making a total of sixteen states now under restrictions. On November 16, also, the Boston Board of Health adopted an order recommending the sterilization by boiling of all uncertified milk supplies before their use as food for human beings. At Spokane, Wash., a herd of 101 cattle, valued at $25,000, was declared by inspectors of the Federal Bureau of Animal Industry to be infected with foot and mouth disease and was ordered killed.

On November 17, 27 new cases of infection were discovered at Ashland and 12 at Dracut, Mass. Six new cases were found at Granby and others at Swansea and Grafton, Mass. Twenty-nine cattle were slaughtered on this day at North Amherst, Mendon and Granby, and others at Mendon and Bellingham, Mass., on November 18. On November 18, also, new foci of infection were discovered at Ashland, Franklin, Russell, Framingham, West Boylston and East Maynard, Mass., and at Providence, R. I. A total of 215 cases of the disease is now known to exist in Massachusetts. Since November 19, however, few more cases have been reported, and it is believed that the epizoötic is now under control.

The cost of dealing with this important and serious infection is, of course, considerable. To the present time approximately $750,000 have been spent, of which $400,000 have been contributed by the United States Government from the appropriated funds of the Department of Agriculture. This is already more than the cost of the outbreak of 1908, in which the Federal Government expended only $300,000. The total further cost of eradicating the infection is estimated at $2,500,000, and an appropriation for this amount will presumably be asked at the next session of the national Congress.

THE HOME HOSPITAL EXPERIMENT IN THE TREATMENT OF POVERTY AND TUBERCULOSIS IN NEW YORK.

THE New York Association for Improving the Condition of the Poor has recently published a report presenting clearly and concisely the results of the Home Hospital experiment which, for the past two years it has been making in the combined treatment of tuberculosis and poverty. This publication (No. 84) details also the methods of the work, and the comparative cost of the treatment of poor families made dependent by tuberculosis.

The questions which the Association set out to answer in this experiment were, first, whether it were possible to treat families, in which one or more members are infected with tuberculosis, by keeping each family together in its home, without imperilling the uninfected members; second, whether the results of such treatment would compare favorably with those secured by removing each patient from his home to a sanatorium or other special institution; and third, whether, in cases where tuberculosis is combined with poverty, it costs more to treat the family as a unit or to break it up.

The results of two years' actual trial of the experiment appear to answer the first question emphatically in the affirmative. Medically the results compare favorably with those obtained in the best sanatoria and hospitals, and the cost has proved less than that of any other adequate treatment of combined poverty and tuberculosis. The general director writes of the work as follows:

"The continued success of the experiment during the second year, even though the number of families under care was doubled, is so gratifying that we already feel confident this method of treating poverty and tuberculosis will in the future play an important part in restoring to health and self-support a large number of families made dependent by this disease. Indeed, we believe that the time has come when we must consider the permanency of the Home Hospital, in which the demonstration has been made, as a part of our work of rehabilitating families, and also endeavor to encourage the establishment of similar institutions."

It was originally planned to continue the experiment for three years; but so convincing seem the results at the end of these two years, that the Association feels its main problem now

is to secure the continuation and extension of the Home Hospital, which already has an average of 130 patients and over 200 individuals. This is by no means the sole, or even the principal work done by the Association, which is also dealing with such questions as those of public laundries, the fly problem, school lunches, health inspection and physical examination of pupils, and popular education in matters of cleanliness. Yet the importance and value of this Home Hospital experiment appeals with peculiar force to both physicians and publicists, since it involves not only an efficient medical treatment of disease, but the sociologic and economic rehabilitation of families and individuals otherwise a double burden and menace to the community.

CHARLES SEDGWICK MINOT.

By the death of Dr. Charles Sedgwick Minot on November 19, after a painful illness bravely borne, the medical profession lost one of its distinguished scientists and investigators. Dr. Minot's brilliant mind and analytic genius won him international repute not only as a scholar but also as a teacher; and his personal qualities, to the relatively few who knew him intimately, revealed a depth and kindliness of disposition that many did not realize. To all his colleagues, his loss is not only that of an inspiring leader but also that of a thoughtful friend.

MEDICAL NOTES.

College of Physicians of Philadelphia.—The Mütter Lecture on Surgical Pathology will be delivered by Dr. F. H. Albee of New York City in the Thomson Hall of the College of Physicians of Philadelphia, at 8 p.m., Dec. 4, 1914. Subject, "The Fundamental Principles Involved in the Use of the Bone Graft in Surgery." After the lecture a reception will be given to Dr. Albee at the Rittenhouse Hotel.

Kinematograph Will Show Tuberculosis Prevention.—As an aid in the Red Cross Christmas Seal sale and the Anti-Tuberculosis Campaign, a motion picture dealing with the problem of tuberculosis in children has been prepared by Thomas A. Edison, and beginning next week it will be shown throughout the country. The film was produced in coöperation with the National Association for the Study and Prevention of Tuberculosis.

The plot of the picture, which is entitled "The Temple of Moloch," is laid in a small village, the chief industries of which are some potteries, owned by Harrison Pratt. He also owns a group of dilapidated tenements, in which most of his employees live. Dr. Jordan, health officer of the village, is struck with the prevalence of tuberculosis, and on investigation finds that the unsanitary working conditions in the Pratt potteries, together with the unhealthy state of the tenement homes of the workmen have most to do with the spread of the disease. He calls the matter to the attention of Pratt, who rebuffs him and tells him it is no use to try to do anything in the matter.

Meanwhile, Dr. Jordan has fallen in love with Eloise, the daughter of Harrison Pratt, and she has become interested in his work, particularly that at the preventorium for children from tuberculous families. Three times Jordan appeals to Pratt, and each time he is rebuffed. Finally, in despair between his love for Eloise and his duty, he exposes the conditions he has discovered through articles in the newspapers, in which he calls the Pratt potteries and tenements a modern "Temple of Moloch," in that they feed young children to the God of Greed. When Eloise, who is ignorant of conditions in the factory, sees the paper she immediately resents what she considers an insult to her father and returns her engagement ring to Dr. Jordan.

A week later Pratt's daughter and son are found to have tuberculosis. When Eric Swanson, a former employee of Pratt's, who had been discharged because he had contracted "potter's rot" in the mills and was no longer able to work, hears of it, he exults over the calamity, which he views as a sort of personal vengeance. He musters all of his strength and steals away to the Pratt home, where Eloise and her brother are taking the cure for tuberculosis on the porch and there denounces Pratt, gloating over him and telling him that his son and daughter were originally infected as young children by Cora Swanson, when she served as nurse-girl for the Pratts several years ago. So struck is Pratt by this denunciation and the graphic story of Swanson, which is affirmed by Dr. Jordan, that he decides to clean up conditions in his potteries and tenements at once.

The story ends with a Christmas scene, in which the engagement ring is returned to the hand of Eloise, and Dr. Jordan receives as a present a liberal check for the employment of visiting nurses, the establishment of open-air schools and other anti-tuberculosis agencies in the town.

Honor for a Boston Physician.—Dr. Charles Greene Cumston, formerly of Boston, a

Fellow of the Massachusetts Medical Society, now resident in Geneva, Switzerland, has recently been elected a Fellow of the Royal Society of Medicine of London.

EUROPEAN WAR NOTES.—Report from Japan on Nov. 13 states that Japanese Red Cross contingents have been sent to Russia, France, and England, and hospital supplies to Servia and Belgium. Two hospital ships have been equipped to receive the wounded from Kiau-chau.

In a letter to Washington, D. C., dated at Kosel, Silesia, on Oct. 19, Dr. Bial F. Bradbury, of Norway, Me., makes the following report of the American Red Cross units assigned to Germany:—

"I have to report that Unit G is finely located at Kosel, being attached to a military hospital of some 800 beds and having 700 wounded on hand. The hospital is made up of nine buildings, and our unit has complete charge of several wards. We have a fine operating room.

"Unit I is at Gleiwitz and well located,—about one hour's ride from here. We hear and see no evidence of cruelty."

Mrs. James Grant Forbes, of Milton, Mass., writing from Ferndale, Chagford, Devonshire, England, makes an urgent appeal for money and supplies to maintain the French hospital at Houlgate, Calvados, on the coast of France, near Caen in Brittany. Contributions may be sent direct to Mrs. Forbes.

On Nov. 21, a cargo of hospital supplies and clothing was shipped from New York aboard the French steamer *La Touraine* for the military hospitals at Havre, France.

On Nov. 20 the New York Belgian relief fund reached a total amount of $517,075.07, the New York Red Cross fund $360,523.25, the American Ambulance Hospital fund $175,839.00, and the American branch of the Prince of Wales fund $75,200.00.

On Nov. 18, the American Red Cross shipped to the Russian Red Cross at Petrograd 1000 pounds of bandages, 10 cases of hospital clothing, and 3 cases of assorted drugs.

On Nov. 21, the New England Belgian relief fund amounted to $102,949.83, the Massachusetts Red Cross fund $76,609.07, the Boston branch of the American Ambulance Hospital fund $33,780.51, and the Boston German Relief fund $13,374.00.

In Kansas City, Mo., a fund of about $50,000 has been raised, representing the largest proportional *per capita* contributions of all cities in the United States. This sum is to be used for the organization and equipment of three Red Cross units, of 3 surgeons and 12 nurses each. One of these units will be sent to France, one to Germany, and one to Serbia.

BOSTON MEDICAL LIBRARY.—At a stated meeting of the Committee on Library and Finance of the Boston Medical Library, held Nov. 16, 1914, it was *Voted*, That the Directory for Nurses be discontinued after December 31, 1914. This action was taken because of the crowded condition of the Library building, the rooms of the Directory being needed to accommodate some of the great number of books which have accumulated rapidly of late, and because the Directory no longer meets the needs of the medical profession.

BOSTON AND NEW ENGLAND.

DIPHTHERIA AND SCARLET FEVER IN GLOUCESTER.—Report from Gloucester, Mass., on Nov. 18 states that within the past three weeks, 25 cases of diphtheria and scarlet-fever have occurred in that city, in consequence of which all the local schools have been closed by the board of health until Nov. 30.

HOSPITAL CONCERTS FOR DECEMBER.—The concerts of the Boston Hospital Music Fund for December are announced as follows:—

Dec. 6.—Somerville City Hospital.

Dec. 13.—New England Hospital for Women and Children, Roxbury.

Dec. 17.—Home for Destitute Catholic Children, Boston.

Dec. 20.—Massachusetts Homeopathic Hospital.

Dec. 27.—Psychopathic Department, Boston State Hospital.

A VIGOROUS CENTENARIAN.—In the issue of the JOURNAL for November 20, 1913, we chronicled the supposed 102nd anniversary of Mrs. Elvira Gannett of North Scituate, Mass., who is said to have been born on Nov. 12, 1811, in that town. We take pleasure in noting that Mrs. Gannett has survived the vicissitudes and perils of another year and recently celebrated her birthday in excellent health. At the age of eighty she sustained a fracture of the neck of the femur, but recovered from this injury so as to be able still to walk actively without assistance.

NEEDS OF CHILDREN'S HOSPITAL.—The following appeal for contributions of money has recently been issued by Mr. Gordon Abbott, treasurer of the Children's Hospital, Boston.:—

"The new hospital offers much larger and much more perfect facilities for taking and caring for patients, both in the wards and in the out-patient side. That the city needed both is shown by the fact that although the increase over last year averages 93% in the wards and 85% in the out-patient side we can do no more than deal with the calls upon us. It is evident that this increase in work means greater expense, and we beg those receiving this letter not to allow their sympathy with the misery abroad to cause them to overlook the fact that we have constant illness and suffering around us at home."

Subscriptions may be sent to Mr. Abbott at 17 Court Street, Boston.

Hospital Beque-ts.—The will of the late William Endicott, of Boston, which was recently filed in the Suffolk county probate court, contains bequests of $50,000 to the Beverly (Mass.) Hospital, $25,000 to the Massachusetts General Hospital, $25,000 to Harvard College for the work of the Cancer Commission, and $10,000 each to the Sharon (Mass.) Sanatorium and the Boston Instructive District Nursing Association.

A Case of Smallpox Aboard the Cretic.—On Nov. 16 a case of smallpox was reported aboard the steamer *Cretic* which arrived in Boston that day from Mediterranean ports. The case was discovered on Nov. 4 during the voyage. Every passenger and member of the crew was vaccinated, and no more cases developed. The patient, a Greek immigrant, is doing well.

Prevention of Infant Mortality by Boston Board of Health.—The Boston board of health has recently issued the following statement of the work done in this city for the prevention of infant mortality:—

"Boston's death-rate of infants for this year thus far is almost as low as that of the city of New York, both being between 90 and 100 per 1000 births.

"The number of babies seen by private charities is infinitesimal as compared with the number of babies seen by the nurses of the division of child hygiene. Everybody knows that the most telling work in tuberculosis is done in the pre-tubercular stage. So in the case of babies, the most telling work is prevention of disease among them.

"For three years Boston has been doing this work through the division of child hygiene of the health department in a manner from the point of efficiency and result second to no city in the country, and at an outlay of money far below its nearest competitor, the city of New York. Owing to a satisfactory system of reporting births, this department is furnished with a list of the names and addresses of all babies born in Boston.

"The division of child hygiene works in perfect harmony with every agency in the city engaged in child welfare work. Through such team work, infant mortality has been reduced in our city from 239 deaths per 1000 births in 1872 to 126 deaths per 1000 births in 1911, to 117 deaths per 1000 births in 1912, to 107 deaths per 1000 births in 1913, and for the nine months ending Sept. 30, 1914, to about 98 deaths per 1000 births. The division of child hygiene was created in 1911.

"For the year ending Dec. 31, 1913, there were born in Boston about 19,247 babies. Of this number, 16,279 were located and visited by the nurses of this division. The balance were not located, either on account of wrong address or removal from the city.

"At the time of this visit, particular stress is laid on the value of breast-feeding, and such information is carried into the home of every baby born in Boston as will insure the continuance of breast-feeding. As a result of such a campaign of education, of the 16,279 babies located in 1913, 12,974 were breast fed, 2,162 were bottle fed, and 1143 were breast and bottle fed.

"Everybody agrees that preventive medicine, as applied to babies, begins with the prospective mother. As far as our appropriation permits, pregnancy work is done by the division of child hygiene."

Evans Memorial Lectures.—On Tuesday evening of last week, Nov. 1, Dr. Allan J. McLaughlin, Massachusetts State Commissioner of Health, delivered the first of a series of popular lectures at the Robert Dawson Evans Memorial Department of Clinical Research and Preventive Medicine of the Massachusetts Homeopathic Hospital. He spoke, in part as follows, on "The Importance of Public Education in the Prevention of Disease."

"One of the most important agencies for conserving public health," he added, "is the public schools, especially the lower grades. The tendency to teach this subject in the upper grades only, I consider unwise. Many of the pupils, coming from surroundings which need betterment, must leave before they reach the upper grades. An opportunity to reach them is lost.

"The instruction must start in the lower grades if it is to do the greatest good. It must be of the simplest character. I tested this plan in the Philippines in time of cholera epidemics and it proved the most effective way of reaching the parents in the poorer homes. In Massachusetts the authorities close the schools when an epidemic appears, but I favor keeping them open and teaching the children preventive methods, rather than letting them run the streets.

"The results of teaching hygiene to young children are doubly effective. The standards in the home are raised by the influence of the children, and the effect is carried on to the next generation. Impressions on the plastic mind of the child are lasting and affect the health and usefulness of that child throughout its entire life. I sincerely hope the pupils in the lower grades of the Boston schools will be given an opportunity to receive this early training in hygiene.

"We must educate the public in hygiene, and that is what I shall try to accomplish in the office I have recently assumed. The average citizen is indifferent to the diseases which he sees around him. He considers them as necessary and inevitable visitations, which come annually and take their toll of death from the community.

"The only way to educate the public in preventive medicine is by teaching it in the lower schools, preaching it in the churches, and spreading it broadcast through the columns of the

press. When we have these forces enlisted we shall come nearer to stamping out the common 'ills to which flesh is heir' than has ever been possible before.''

The schedule for the remainder of this series of lectures is as follows:—

Nov. 24.—"The Obligations of Fatherhood," Dr. John L. Coffin.

Dec. 1.—"The Public Press and the Prevention of Disease," Dr. Hugh Cabot.

Dec. 8.—"Our Children—What Shall We do With Them?" Dr. Edward P. Colby.

Dec. 15.—"The Truth About Twilight Sleep," Dr. Edwin W. Smith.

Dec. 29.—"Rheumatism," Dr. Alonzo G. Howard.

Jan. 5.—"Tuberculosis," Dr. Herbert C. Clapp.

Jan. 12.—"The Immigrant and Public Health," George W. Tupper, immigration secretary, Y. M. C. A.

Jan. 19.—"Character and Health," President Lemuel H. Murlin of Boston University.

Jan. 26.—"The Social Value of Preventive Medicine," Robert A. Woods.

Feb. 2.—"The Proper Selection and Use of Food," Dr. J. Arnold Rockwell.

Feb. 9.—"Avoidable Causes of Insanity," Dr. Elmer E. Southard.

Feb. 16.—"Sexual Advice to Men," Dr. A. W. Weysse.

Feb. 23.—"Practical Eugenics," President G. Stanley Hall of Clark University.

Mar. 2.—"The Church as a Factor in the Prevention of Disease," Dean Lauress J. Birney of Boston University.

Mar. 9.—"Diphtheria," Dr. George B. Rice.

Mar. 16.—Guide Posts for the Prospective Mother," Dr. Martha E. Mann.

Mar. 23.—"Heredity in Relation to Sex Hygiene," Dr. Eliza B. Cahill.

April 6.—"The Physical Woman and Her Enemies," Dr. DeWitt G. Wilcox.

April 13.—"The Physiologic, Economic and Moral Consideration of Alcohol and Tobacco," Dr. J. P. Sutherland.

April 20.—"What Shall We Do in Emergencies?" Dr. Clarence Crane.

April 27.—"Milk," Dr. Wesley T. Lee.

May 4.—"What Is In the Blood," Dr. Helmuth Ulrich.

May 11.—"Some Public Health Dangers," Dr. J. Walter Schirmer.

May 18.—"Our Flying Foes," Dr. W. H. Watters.

May 25.—"Demonstration in Public Health Nursing," under direction of Miss M. H. P. Bridges, practical instructor of District Nursing Association.

CASES OF INFECTIOUS DISEASES reported to the BOSTON BOARD OF HEALTH for the week ending Nov. 17, 1914:—Diphtheria, 100, of which 3 were non-residents; scarlatina, 58, of which 5 were non-residents; typhoid fever, 13, of which 13 were non-residents; measles, 105; tuberculosis, 42. The death-rate of the reported deaths for the week was 15.42.

DEDICATION OF FORSYTH DENTAL INFIRMARY.—The formal dedication of the Forsyth Dental Infirmary took place on Tuesday of this week, Nov. 24, with addresses by President Eliot, Governor Walsh, Mayor Curley, Dr. Rosenau, and others. There was music by a chorus of public school children. On Friday of this week, Nov. 27, the building will be open for inspection by teachers; on Nov. 28, by children; on Nov. 29, by parents and the public. On Tuesday, Dec. 1, the Infirmary will be opened for the reception of patients.

NEW YORK.

MORTALITY STATISTICS.—The weekly reports of the health department show that the mortality in the city during the month of October represented an annual death-rate of 11.14, as against 12.07 in September and 11.80 in October, 1913. In the week ending Oct. 3 a low record in the death-rate was reached, 10.58. The previous low record was in the week ending Oct. 18, 1913, when the rate was 11.20, and this is the first time, therefore, that a figure below 11 has been recorded. In one of the weeks of the month not a single death from measles was reported, and in another week there was no death from scarlet fever. Among the diseases in which there was a diminished fatality were the following: The weekly average of deaths from typhoid fever declined from 13.75 in September to 9 in October; the weekly average from scarlet fever, from 2 to 1.5; from epidemic cerebrospinal meningitis, from 5.75 to 4.25; from pulmonary tuberculosis, from 157.25 to 140.5; from tuberculous meningitis, from 11.25 to 8.75; from cancer, from 84.5 to 82.75; from diarrheal diseases under five years, from 176 to 79; from appendicitis and typhlitis, from 13.75 to 10.75; and from Bright's disease and acute nephritis, from 95.75 to 81.5. Among the diseases in which there was an augmented mortality were the following: The weekly average of deaths from diphtheria and croup increased from 14.75 to 18; from acute bronchitis, from 5.75 to 8.25; from pneumonia, from 44.25 to 55.75; from bronchopneumonia, from 42.5 to 45.5; from apoplexy and softening of the brain, from 12 to 21.5; from organic heart diseases, from 148 to 164.75; from hernia and intestinal obstruction, from 7.75 to 11; from cirrhosis of the liver, from 11.75 to 14; and from puerperal diseases, from 9 to 11.25.

ANTI-TUBERCULOSIS CAMPAIGN.—A largely attended tuberculosis conference was held at Syracuse on Nov. 11, under the auspices of the State Department of Health and the State Charities Aid Association, the purpose of which was to discuss plans and organize additional agencies for the prosecution of the anti-tuberculosis campaign in the state.

BEQUESTS.—By the will of the late David Mayer of New York bequests are left to fourteen educational and charitable societies and institutions. Among these bequests are the following:

$2,500 each to Mount Sinai Hospital and the Montefiore Home and Hospital for Chronic Diseases, and $1,000 each to Lebanon Hospital and the German Hospital and Dispensary.

Death-Rate for Week Ended Nov. 14.—The mortality during the past week was much the same as the corresponding week of 1913. The number of deaths reported from organic heart diseases and Bright's disease of the kidneys was somewhat in excess of that of last year; the deaths from violence were a trifle lower.

The death-rate from all causes was 11.92 per 1000 of the population, as against a rate of 12.14 during the corresponding week in 1913, a decrease of .22 of a point, which is equivalent to a relative decrease of 24 deaths.

Viewed from the point of age grouping, infants under one year and between one and five years showed a decreased mortality, as did the age grouping between five and sixty-five years; on the other hand, the mortality of the extremely aged was considerably higher, an increase of 43 deaths being reported.

As the calendar year approaches its end it is interesting to note that there has been up to the present time a decrease of three-tenths of a point in the death-rate compared with the corresponding rate during 1913. The maintenance of this decrease until the end of the year will indicate a saving of 1730 lives as compared with the mortality experience of 1913.

Massachusetts Medical Society

Hampshire District Medical Society.—A public meeting was held in Carnegie Hall, Northampton, November 12, 1914, under the auspices of the Committee on Health and Public Education of the Hampshire District Medical Society. Dr. Thomas F. Harrington, director of hygiene in the Boston Public Schools, spoke on the topic, "Common Preventable Diseases" to an audience of seventy-five. Dr. Maurice W. Pearson, of Ware, presided on behalf of the committee of the Hampshire District. The meeting was a popular one, Dr. Harrington being one of the speakers in Massachusetts on the list of the Speakers Bureau of the Council on Health and Public Instruction of the American Medical Association.

Current Literature

Medical Record.

November 7, 1914.

1. Callender, G. R. *Albumen in Sputum and Its Relation to Pulmonary Disease.*
2. Friedman, H. M. *Problems of Life.*
3. *Heller, J. *A Study of One Hundred and Fifty Cases of Twilight Sleep.*
4. Robinson, B. *Practical Points in Tonsillar Infection.*
5. Levings, A. H. *What Preparation is There in the Fundamental Branches in Our Dental Schools for the Teaching of Oral Surgery?*
6. Tyrrell, J. B. *Foot Troubles as a Factor Affecting Human Efficiency.*

3. Heller reports his experience with twilight sleep in 150 cases at the Jewish Maternity Hospital in Brooklyn. In 122 cases he obtained complete amnesia and an almost equal degree of analgesia. In 13 cases he obtained analgesia without amnesia. In 15 cases there were no results. He concludes that this method will practically abolish pain in 90% of cases and that it is free from danger to health and life of both mother and child. He believes that it is not necessary to give enough scopolamine-morphine to produce amnesia. [L. D. C.]

New York Medical Journal.

November 7, 1914.

1. Gwathmey, J. T. *General Anesthesia, with Special Reference to Surgery of the Genitourinary Tract.*
2. Mitchell, J. F. *Local Anesthesia in Relation to the Surgery of the Genitourinary Tract.*
3. Knopf, S. A. *Is the Modern Anti-tuberculosis Crusade Really a Failure?*
4. Benedict, A. L. *Operative Treatment of Cancer from the Standpoint of Internal Medicine.*
5. *Lydston, G. F. *Implantation of the Generative Glands and Its Therapeutic Possibilities.*
6. *Robinson, W. D. *Pilocarpine in High Blood Pressure.*
7. Kenefick, T. A. *The Relief of Gas Pains after Appendicectomy.*
8. Rimer, E. S. *Some Essential Points in Infant Feeding.*
9. Yoosuf, A. K. *Hodgkin's Disease.*
10. Lewis, T. *The Excitatory Process in the Heart.*

5. Lydston concludes an exhaustive paper on the therapeutic possibilities of implantation of the generative glands. He finds that total or partial implantation of human sex glands in both male and female is practicable. A close blood relationship between donor and recipient is desirable but not necessary for purely therapeutic purposes. Glands taken from the healthy dead prior to the beginning of decomposition are of therapeutic value equal to that of those taken in vivo, if implantation succeeds. The ovary is slightly more susceptible to implantation than the testis. The gland of ons sex is transplantable upon the other and the hormone of one is possibly useful to the other. The sites of election for implantation are the peritoneum in the female and the tunica vaginalis in the male. The internal secretion of the sex glands is stimulant, nutrient, tonic and reconstructive, and many therapeutic possibilities are suggested for implantation, viz., greater longevity, delayed senility, postponed or attenuated climacteric, relief of sexual impotence and sterility, of imperfect sexual development, of dementia precox and other psychic disorders, of arteriosclerosis, and of debility from chronic diseases such as tuberculosis, severe anemia, neurasthenia, eczema and psoriasis.

6. Robinson discusses the use of pilocarpine for the relief of hypertension and reports five cases in which he obtained excellent results with it in doses of 1/30 of a grain three times a day. In intelligently selected cases, he says, it is often of great value. The general feeling that the drug is dangerous is due to the fact that it has been given in too large a dose (gr. 1/10 to 1/4). [L. D. C.]

NOVEMBER 7, 1914.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

1. RAVENEL, M. P. *The Education of Health Officers.*
2. BASS, F. *Test for Ventilating Plants.*
3. WINSLOW, C. E. A. *The Importance of Studying the Actual Condition of Hospital Air.*
4. MILLER, J. A. *Hospital Ventilation from the Point of View of the Clinician.*
5. LEE, F. S. *Laboratory Experiments with Air.*
6. OHMES, A. K. *Hospital Ventilation from the Ventilating Engineer's Point of View.*
7. VAN DER BENT, T. J. *A Comparison of the Hospital of Old with the Modern Structure.*
8. BECK, J. C. *Chronic Focal Infection of the Nose, Throat, Mouth and Ear.*
9. WILSON, N. L. *The Faucial Tonsils as a Gateway to General Infections.*
10. MOORE, R. *The Present Teaching of Psychiatry in American Medical Schools.*
11. SINGER, H. D. *The Ideal Course in Psychiatry for Medical Schools.*
12. REMSEN, C. M. *Operative Intervention in Cyst of the Left Cerebral Hemisphere, with a Consideration of the Preoperative and Subsequent Symptoms.*
13. CLARK, L. P. *A Clinical Contribution to the Diagnosis of Epilepsy.*
14. FABER, H. K. *A Culture of B. Tuberculosis from the Blood Post Mortem of a Case of Miliary Tuberculosis.*
15. LECOMTE, R. M. *Rabies. Its Diagnosis in Animals and Prevention in Man.*
16. DICK, G. F., AND DICK, G. R. *The Bacteriology of the Urine in Two Cases of Parenchymatous Nephritis.*
17. RHEIN, J. H. W. *Tumor of the Crus Cerebri.*
18. MCCLEAVE, T. C. *Idiosyncrasy to Orthoform.*

SURGERY, GYNECOLOGY AND OBSTETRICS.

NOVEMBER, 1914.

1. *VON EISELSBERG, F. A. *The Choice of the Method of Operation in the Treatment of Gastric and Duodenal Ulcer.*
2. *SHERREN, J. *Contribution to the Discussion on "the Choice of Operation in Chronic Gastric and Duodenal Ulcer."*
3. *ALLISON, N., AND BROOKS, B. *Ankylosis: an Experimental Study.*
4. *BUERGER, L. *Is Thrombo-Angitis Obliterans an Infectious Disease.*
5. REYNOLDS, E. *Forward Fixation of the Cervix as a Predisposing Cause of Some Retrodeviations of the Uterus, and an Operation for Its Release.*
6. CASE, J. T. *A Critical Study of Intestinal Stasis, Including New Observations and Conclusions Respecting the Causes of Ileal Stasis.*
7. KELLY, H. A., AND LEWIS, R. M. *Diagnosis of the Particular Form of Hydronephrosis Due to Movable Kidney.*
8. HAAS, S. L. *Regeneration of Cartilage and Bone with a Special Study of These Processes as They Occur at the Chondrocostal Junction.*
9. *FRANK, R. T. *The Clinical Manifestations of Disease of the Glands of Internal Secretion in Gynecological and Obstetrical Patients.*
10. WEIBLE, R. E. *Volvulus: Torsion of the Whole Mesentery.*
11. THEILBER, A. *Causal Factors in the Disposition to Cancer in Old Age.*
12. CHETWOOD, C. H. *A New and Rapid Method for Operating upon Impassable Urethral Stricture.*
13. PFAHLER, G. E. *The Study of Chronic Intestinal Stasis by Means of the Roentgen Rays.*
14. PALMER, E. P. *Bone Transplantation as a Treatment of Fracture and Fracture-Dislocation of the Spine.*
15. FOWLER, R. S. *Decortication of the Lung.*
16. HAUBOLD, H. A. *Traumatic Aphasia.*
17. HUPP, F. L. *Tracheotomy: A New Retractor and Tube Pilot for the Emergency Operation.*
18. FIGUEROA, S. *An Unusual Laceration of the Female Urethra.*
19. ROBLEE, W. W. *Splenectomy for Primary Pernicious Anemia.*
20. HAGNER, F. R. *A New Method of Controlling Hemorrhage Following Suprapubic Prostatectomy.*
21. WHITE, C. S. *A Modification of the Technic in the Operation for Suppurative Appendicitis, Based on Post-operative Hemorrhage.*
22. THOMSON, ST. C. *A Contribution to the Discussion on "The Results of Operation (Laryngofissure) for Intrinsic Cancer of the Larynx."*

1. von Eiselsberg's paper is of interest and importance, but does not lend itself to ready abstraction. Considerable space is given to description of technic.

2. Sherren differs from von Eiselsberg in stating without reservation that gastrojejunostomy is the operation par excellence for chronic gastric ulcer, whether situated at the pylorus or distant from it. von Eiselsberg states that ulcers removed from the pylorus do not always heal after this operation but that other gastric or jejunal ulcers subsequently form.

3. Allison and Brooks from experimental work find that an inflammatory process in a joint which is of sufficient severity to result in the formation of granulation tissue will destroy the joint cartilage. On removal of the cartilage or in partial excision of the joint, ankylosis by bone is a slow process which takes place first by union of granulation tissue, then union by dense fibrous tissue, followed by a metaplasia of fibrous tissue into fibro-cartilage, and later a transformation into bone. The shortest period of complete experimental ankylosis was 180 days. In man it is longer. Experiments of others demonstrating that interposition of soft parts prevented ankylosis were erroneous because of too short observation. They believe that the difference which exists betwen the epiphysis and diaphysis in the capacity for bone regeneration is explained by the fact that there is no periosteum on the epiphysis.

4. Buerger, in an interesting study of endarteritis obliterans, concludes that the process is an infectious one, involving the superficial as well as the deep veins. The article is well illustrated and the conclusion seems logical.

9. Frank's article on the condition of the glands of internal secretion in relation to gynecology and obstetrics is very thorough and of practical as well as theoretical interest. It is too long for abstract.

[E. H. R.]

THE LANCET.

OCTOBER 24, 1914.

1. POWELL, R. D. *The Harveian Oration on "Advances in Knowledge Regarding the Circulation and Attributes of the Blood Since Harvey's Time."*
2. PICK, B., RANKINE, R. A., AND LAMBERT, J. *Shell Wounds in Modern Naval Warfare.*
3. *MILLER, C. H. *Pyloric Obstruction in Infants.*
4. TROTTER, W. *Prognosis in Cancer of the Tongue.*
5. MAKINS, G. H. *Further Notes upon the Wounded in the Present Campaign.*
6. OWEN, E. *Epsom and Ewell War Hospital.*

3. Miller presents ten cases of pyloric obstruction in infants, five females and four males, the youngest age sixteen days, the oldest eighteen weeks. Of these ten infants, six recovered. He discusses the physical signs and symptoms. Medical treatment consisted in keeping the patient warm, washing out the stomach, and feeding with predigested milk. The easiest way he found to keep the baby warm was to

put it all but the head in a hot air bath. He concluded that some of these cases can only be treated by the physician, and that some would be better off treated by the surgeon, but that whether they are surgically treated or not, medical treatment is always necessary, and that no treatment will be effective without the care of a specially skilled nurse.

[J. B. H.]

OCTOBER 31, 1914.

1. TREVES, F. *The Influence of Enforced Dogmatism in Medicine.*
2. STEVENSON, W. F. *Note on the Use of "Dum-Dum" and Explosive Bullets in War.*
3. WEBB-JOHNSON, C. *The Soldiers' Feet and Footgear.*
4. SHIPLEY, A. E. *Insects and War: Flies.*
5. LAZARUS-BARLOW, W. S., ET AL. *Discussion on the Action of Radiations on Cells and Fluids.*
6. PENFOLD, W. J., ET AL. *Discussion on Variability among Bacteria and Its Bearing on Diagnosis.*
7. CRUICKSHANK, J., AND MOYES, J. M. *The Presence and Significance of Nitrites in Urine.*
8. *HORT, E. C. *The Recognition of Hemic Infections of the Urine: Its Clinical and Experimental Value.*
9. MORGAN, M. M., AND TEACHER, J. H. *Aneurysm of the Aorta Due to Bacterial Infection.*

8. Hort believes that more successful results in finding the bacterial cause of various prolonged fevers will be obtained from a study of the urine than from that of the blood. The comparatively high bactericidal power of the blood and the low bactericidal power of the urine explains, in his mind, the fact. Out of twenty cases of lobar pneumonia, in no instance did he fail to find the causative organism in the urine after careful search. In thirty cases of typhus fever he had equally successful results in isolating organisms which he believed to be the cause of this disease. He believes that for both diagnosis and treatment, hemic infections of the urine are well worth studying in every case in which continued fever occurs.

[J. B. H.]

THE QUARTERLY JOURNAL OF MEDICINE.

VOL. 8. No. 29. OCTOBER, 1914.

1. *HUNE, W. E., AND CLEGG, S. J. *A Clinical and Pathological Study of the Heart in Diphtheria.*
2. *BOLTON, C. *The Effects of Anemia upon the Pathological Processes Occurring in Acute Ulcer of the Stomach.*
3. NISH, A. E. *Conduction in the Auricles.*
4. *FALCONER, A. W., AND MCQUEEN, J. M. *Observations on Inspiratory Diminution of the Pulse (Pulsus Paradoxus).*
5. *ELLIOTT, T. R. *Pathological Changes in the Adrenal Glands.*
6. PATRICK, A. *The Tonicity of the Abdominal Muscles in Typhoid Fever.*

1. Hune and Clegg studied the heart in 40 cases of diphtheria presenting irregularity of the pulse. The arrhythmia was of the sinus type in 22 and associated with normal cardiac signs. In the remaining 18, various types of arrhythmia were encountered, from extra-systolic to auricular fibrillation and heart-block. On microscopical examination they were unable to correlate the signs in life with the lesions found post mortem. They conclude that in diphtheria any form of irregularity, except sinus arrhythmia, indicates injury to the cardiac muscle or nerves, and calls for prolonged rest in bed.

2. Bolton, whose experimental and clinical work on gastric ulcer is well known, reports the results of experiments on the effect of anemia on the healing of gastric ulcer. The usual clinical teaching has been that anemia is an important etiological factor in peptic ulcer. The author found in patients dying of hemorrhage that the ulcer always showed signs of healing at the edges, and has not met with cases of ulcer associated with chlorosis, or preceded by anemia. To investigate the question experimentally he produced acute ulcers in cats by injections of gastrotoxic serum into the wall of the stomach. Anemia was induced by bleeding from the carotid artery. The result of the experiment was that the ulcers did not form more easily and did not heal more slowly in the anemic animals than in the controls.

4. The paradoxical pulse has been considered a sign of some importance in the diagnosis of adhesive mediastino-pericarditis. It has been reported present also in pericarditis with massive effusion, in obstruction of the air passages, as in croup, and in some otherwise normal individuals. Falconer and McQueen demonstrate the important fact that in many healthy young adult males a typical paradoxical pulse can be produced by simple retraction of the shoulders. They ascribe this to oval deformation of the third part of the subclavian artery, so that it is easily compressed by the muscles acting on the shoulder. It is important therefore in cases of paradoxical pulse to exclude this source of error before drawing diagnostic conclusions.

5. Elliott has made a thorough study of the adrenalin content and the lipoid of the adrenal gland in a variety of conditions. The interesting fact was brought out that the amount of lipoid in the cortex has no relation to the fat content of the rest of the body, for cases with marked emaciation often showed a heavy load of lipoid, and in acute toxemias, such as diphtheria, the cortical lipoid was markedly diminished, although the adipose tissue was not. The amount of lipoid was found also to bear no relation to the amount of adrenalin in the medulla. The latter was diminished in many of the acute infectious diseases, but not enough to imperil the circulation. The greatest loss of adrenalin was met with in cardiac failure associated with great mental distress. This is analogous to the experimental glycosuria and emptying of the adrenals by fright. With regard to the relation of the adrenal to hypertension, Elliott found no increase in the adrenalin of the medulla and no increased weight of the gland in this condition.

[W. T.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

No. 30. JULY 28, 1914.

1. SEITZ, L., WINTZ, AND FINGERHUT. *The Biological Function of the Corpus Luteum, Its Chemical Properties, and Its Use in the Treatment of Menstrual Disorders.*
2. STUBER, B., AND HEIM, R. *Fatty Acids in Relation to the Coagulation of Blood.*
3. FREND, R., AND BEAHM, C. *Further Studies with Abderhalden's Reaction, and a Comparison Between It and the Anti-trypsin Method.*
4. LINDI, P. *The Question of Substrata in Abderhalden's Dialysis Method.*
5. AUJENRIETH, W., AND MONTIGNY, W. *The Colorimetric Estimation of Blood Sugar.*
6. *OLPP. *Auscultation by the Tuning-fork Method.*
7. MÜLLER, H., AND BENDERE, E. *Experiences with Nicoll's Gonococcus Vaccine.*
8. MÜLLER, T. *The Operative Treatment of Wounds of the Heart.*
9. EITNER, E. *The Results of Two Plastic Operations on the Ear.*
10. *WEIH. *Tricalcol in Infant Feeding.*
11. HEISLER, A. *Erythema Infectiosum.*
12. BORCHARDT, M. *A Plaster Dressing to Stimulate Epithelium on Granulating Surfaces.*
13. WEINBERG, M. *Abderhalden's Dialysis Method in the Diagnosis of Malignant Tumors.*
14. SCHÜTZE, C. *The Disadvantage in the Increasing Number and Cost of Sanatoria.*

6. Olpp combines a tuning fork and stethoscope to separate solid organs from those containing air or fluid. The principle of the method is based on the fact that a solid body, over which a tuning fork is placed becomes resonant, while as soon as the tuning fork passes beyond the solid edge of the organ, the note transmitted to the stethoscope changes. Thus by moving the fork from point to point over a given area, Olpp claims that he can map out various organs accurately, and can differentiate solid tumors from those containing gas or fluid.

10. Tricalcol is a proprietary powder made by W. Wolff and Company, in Elberfeld, to make a milk mixture with high potassium and phosphoric acid content. It is an amorphous, white powder, containing 20% of tricalcium phosphate and 10.5% nitrogen. Weih concludes that it is useful in spasmophilia and rachitis, but cannot take the place of human milk in infant feeding. It is also expensive. [R. F.]

No. 31 AUGUST 4, 1914.

1. TRAUBE, J. *Physico-chemical Studies on Blood Serum.*
2. *KRÖNIG, B. *The Biological Penetration of Radium, Mesothorium and Roentgen Rays.*
3. AMMANN, J. A. *Developments in the X-ray Treatment of Malignant Disease.*
4. DEBLOEME, P. L. J., SWART, S. P., AND TERWEN, A. J. L. *The Colloidal Nitrogen of the Urine, and Its Significance in the Diagnosis of Cancer.*
5. NOEGGERATH, C. T., AND ZONDEK, H. *The Diagnosis of Kidney Disease in Children.*
6. *ROVIGHI, A., AND SECCHI, R. *Leucocytosis Induced by Cold.*
7. BEST, F. *The Diatherm in Diseases of the Eye.*
8. BUM, H. L. *The Diagnostic Features of Carcinoma of the Stomach.*
9. HIRSCHEL, G. *Resection of the Duodenum and Papilla for Carcinoma.*
10. NONNENBRUCH, W. *Hour-glass Stomach in Gastric Ulcer.*
11. STENGELE, U. *A Case of Aneurysm of the Abdominal Aorta Showing Tendency to Heal.*
12. GRABI, H. *The Treatment of Epilepsy with Luminal.*
13. TRENDELENBURG, P. *Tampospuman.*
14. NERLINGER, H. *A New Method for Making Tasteless Preparations of Ill-tasting Medicines.*
15. WEINBERG. *The Technic of Abderhalden's Dialysis Method.*
16. SCHWARTZ, G. *The Care of Deep Carcinoma by the External Application of Roentgen Rays.*
17. MYER, M. *The Question of Emetin in the Treatment of Dysentery.*
18. SEITZ, L., WINTZ, H., AND FINGERHUT, L. *The Biological Function of the Corpus Luteum, Its Chemical Properties, and Its Use in the Treatment of Menstrual Disorders.*

2. It is generally stated in the literature that radium and mesothorium rays cannot penetrate to a depth of more than 2-3 cm., and that, therefore, these rays are useless in the treatment of deep lying carcinoma. Krönig reports several cases which disprove this sentiment. Krönig concludes that tumors vary in their sensitivity to the different rays. Certain tumors which do not react to high roentgen-ray exposure, respond at once to relatively small doses of radium, and vice versa. Therefore the idea that radium therapy has outlived its usefulness and that only the x-rays are of importance is harmful to the further development of the proper treatment of cancer.

6. Many experimenters have reported that chilling of the body will produce a leucocytosis in the peripheral vessels. The cause of this has been disputed. Rovighi and Secchi quote observations which show that the application of cold to the body causes a peripheral leucocytosis, which is compensated by a leucopenia in the central blood vessels. In addition they believe that cold water has a favorable influence upon the circulation, the nervous system, and upon internal metabolism. [R. F.]

Miscellany.

HUMAN HEALTH AND THE FOOT AND MOUTH DISEASE.

THE United States Department of Agriculture makes the following statement about foot and mouth disease: The anxiety that has been expressed in several quarters in regard to the effect upon human health of the present outbreak of the foot and mouth disease is regarded by government authorities as somewhat exaggerated. The most common fear is that the milk supply might become contaminated, but in view of the precautions that the local authorities in the infected areas are very generally taking, there is comparatively little danger of this. Milk from infected farms is not permitted to be shipped at all. The only danger is, therefore, that before the disease has manifested itself some infected milk might reach the market. For this reason, experts in the United States Department of Agriculture recommend pasteurization. As a matter of fact, however, pasteurization is recommended by the department anyway for all milk that is not very high grade and from tuberculin tested cows.

It has been demonstrated by experiments which have been made in Denmark and Germany that pasteurization will serve as a safeguard against contagion from the foot and mouth disease just as readily as it does against typhoid fever, but in any event it must be thoroughly done—the milk must be heated to 145 degrees Fahrenheit and held at this temperature for 30 minutes.

In this country the foot and mouth disease has been so rare that there are few recorded cases of its transmission to human beings. In 1902 a few cases were reported in New England, and in 1908 in a few instances eruptions were found in the mouths of children which were believed to have been caused by contaminated milk. In both of these outbreaks, the sale of milk was stopped as soon as the disease was found among the cattle. As long, therefore, as the disease can be confined by rigid quarantine to certain specified areas, the danger from this source is very small. Should the pestilence spread all over this country and become as general as it has been at various times in large areas in Europe, the problem would become more serious. Under any circumstances, however, pasteurization would be an efficient remedy. Where pasteurization is not possible, and where there is any reason to suspect that the disease may exist, the precaution of

boiling milk might be advisable. Simple directions for pasteurizing milk at home, however, are contained in Circular 127, which will be sent free on application to the United States Department of Agriculture.

Cows affected with the malignant form of the disease lose practically all of their milk. In mild cases, however, the decrease may be from one-third to one-half of the usual yield. The appearance of the milk also changes. It becomes thinner, bluish, and poor in fat. When the udder is affected, the milk frequently contains coagulated fibrin and blood, so that a considerable sediment forms, while the cream is thin and of a dirty color. These changes, however, occur only when the disease is in an advanced stage and, as a matter of fact, the disease is not permitted to pass into an advanced stage, as any stricken animal is at once slaughtered.

Men who come in contact with diseased animals may also become infected. In adult human beings the contagion causes such symptoms as sore mouths, painful swallowing, fever, and occasional eruptions on the hands, finger tips, etc. While causing considerable discomfort, however, the disease is rarely serious. Where it is very prevalent among animals, some authorities believe that it is fairly general among human beings, but that the disturbances it causes are usually so slight that they are not brought to the attention of the family physician. There is, however, a very good reason for everyone giving the diseased animals as wide a berth as possible, namely, that otherwise they may easily carry the disease to perfectly healthy herds. Federal inspectors engaged in the work of eradicating the pestilence are thoroughly equipped with rubber coats, hats, boots and gloves, which may be completely disinfected; and others who lack this equipment are strongly urged not to allow their curiosity to induce them to become a menace to their own and their neighbors' property.

The disease, in short, is dangerous because of the loss that it occasions to property, and not because of its effects upon the health of mankind. At present all infected herds are being slaughtered as soon as they are discovered, the carcasses buried, and the premises thoroughly disinfected. Until all danger of infection has been removed in this way, the local authorities quarantine the milk.

Those who wish additional precautions are recommended to use pasteurized milk, but as has already been said, this recommendation holds true whether or not there is any fear of the foot and mouth disease.

MEMORIAL TO JAMES BARTLETT BREWSTER, M.D.

IN this busy world reminiscence holds little place. Yet, on occasions, a few words of tribute to one who has gone may not be unwelcome to his contemporaries.

Dr. Brewster was one of my earlier house surgeons at the City Hospital, and one of the most acceptable. At that most active period of my life I was engaged in some surgical novelties, which would have done badly under an incompetent assistant. Dr. Brewster was as much interested as I was, and to his constant watchfulness and care much of my success was due. I felt that I owed him a great deal. The qualities he then displayed were an augury of professional success in his own life. He was a well thought of, earnest, faithful doctor because he was so made by Nature. Sympathetic, kind, genial, he was equally firm, patient and industrious. He filled a large place in Plymouth County. Until middle age he gave himself up to his patients.

Then came gradually clouds on his horizon. His personal health called a halt, and the latter years of his life were passed in enforced idleness; but were grateful to those about him on account of his fortitude and cheerfulness.

DAVID W. CHEEVER.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces an open competitive examination for epidemiologist, for men only. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Public Health Service for service in the field, at a salary of $4000 a year, and vacancies as they may occur in positions requiring the similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of this position will be to make laboratory and field investigations of the diseases of man in relation to prevalence, causation and methods of control, and to conduct field studies of public health matters. It is desired to secure persons thoroughly qualified to do laboratory and field research work in epidemiology, and to organize and conduct such work in the field.

Graduation with an A.B. or B.S. degree from a college or university of recognized standing, and graduation with an M.D. degree from a medical school of recognized standing, and at least five years' experience in epidemiological research, including field studies and laboratory technic, and at least five years' public health service under Federal, State, or municipal authorities, are prerequisites for consideration for this position. Experience in epidemiologcal research and experience in public health service may be concurrent. Statements as to education and experience are accepted subject to verification. Applicants must have reached their twenty-fifth but not their fortieth birthday on the date of the examination.

This examination is open to all men who are citizens of the United States and who meet the requirements. Persons who meet the requirements and desire this examination should at once apply for Forms 304 and 2095, stating the title of the examination for which the forms are desired, to the United States Civil Service Commission, Washington, D. C., the Secretary of the United States Civil Service Board, Post Office, Boston, Mass.; Philadelphia, Pa.; Atlanta,

Ga.; Cincinnati, Ohio; Chicago, Ill.; St. Paul, Minn.; Seattle, Wash.; San Francisco, Cal.; Customhouse, New York N. Y.; New Orleans, La.; Honolulu, Hawaii; Old Customhouse, St. Louis, Mo.; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed, excluding the medical certificate, and filed with the Commission at Washington prior to the hour of closing business on December 15, 1914.

CHANGES IN THE MEDICAL CORPS, U. S. NAVY, FOR THE WEEK ENDING NOV. 14, 1914.

October 24, Medical Inspector G. A. Lung, from Naval Training Station, Newport, R. I., to Torpedo Station, Newport, R. I.

Surgeon C. F. Ely, from Naval Station, Guam, to *South Dakota*.

P. A. Surgeon Martin Donelson, to Receiving Ship, Norfolk, Va.

October 27, Asst. Surgeon J. N. Bassin, to Receiving Ship at Norfolk.

October 29, Medical Director M. F. Gates, Commissioned Oct. 27, 1914.

Surgeon W. H. Rennie, Commissioned October 27, 1914.

Surgeon F. L. Benton, from Marine detachment, Pensacola, Fla., to Naval Station, Key West, Fla.

P. A. Surgeon C. E. Strite, from Naval Station, Key West, Fla., Marine detachment, Pensacola, Fla.

October 31, Surgeon A. Farenholt, from *Missouri* to *St. Louis*.

November 4, P. A. Surgeon L. W. Johnson, from Bureau of Medicine and Surgery, to Naval Station, Guam, via Army Transport, Dec. 5, 1914.

P. A. Surgeon H. F. Lawrence, from *Wyoming* to home. Wait orders.

P. A. Surgeon N. T. McLean, to *Wyoming*.

November 5, Med. Insp. A. R. Alfred, Commissioned Nov. 20, 1913.

P. A. Surgeon L. W. McGuire, to *Maine*.

November 7, P. A. Surgeon E. P. Halton, retired, detached Naval Recruiting Station, Boston, Mass., placed on the retired list of officers from November 4, 1914.

November 9, P. A. Surgeon E. E. Curtis, detached Naval Station, Guam, to Pacific Reserve Fleet.

November 10, Surgeon H. D. Wilson, to the *Rhode Island*.

Surgeon Wm. Seaman, detached from *Rhode Island*, to temporary duty Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

November 12, Pharmacist Frank Fulton to Naval Hospital, Boston, Mass.

SOCIETY NOTICES.

HARVEY LECTURE.—The fourth in the current series of lectures before the Harvey Society will be given on Saturday evening of this week, Nov. 28, at the New York Academy of Medicine, by Prof. Lafayette B. Mendel of Yale University, on "Nutrition and Growth."

NEW ENGLAND PEDIATRIC SOCIETY.—The thirty-fourth meeting of the New England Pediatric Society will be held in the Boston Medical Library, Friday, December 4, 1914, at 8.15 P.M.

The following papers will be read:

1. "Children with Positive Skin Tuberculin Reactions," Dr. Orville F. Rogers, Jr., Boston.
2. "Traumatic Rupture of Intestine," Dr. Lincoln Davis, Boston.
3. "A Case of Acetonuria." Dr. Williard S. Parker, Boston.
4. "The Significance of the X-ray Gastro-Intestinal Findings in Cases of Congenital Stenosis of the Pylorus Following Posterior Gastro-Enterostomy," Dr. Charles L. Scudder.
5. "Some Studies in Fat Indigestion," Dr. Charles Hunter Dunn, Boston.

Light refreshments will be served after the meeting.

C. A. PRATT, M.D., *President*,
F. B. TALBOT, M.D., *Secretary*.

APPOINTMENTS.

MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.—The following appointments and faculty changes have recently been made. *Dr. Herbert H. Cushing*, professor of practical anatomy; *Dr. Ardrey W. Downs*, professor of experimental physiology; *Vernon K. Suydam*, professor of physics; *Charles E. Vanderkleed*, professor of analytical chemistry; *Dr. John H. Small*, associate professor of bacteriology; *Dr. Eugene A. Case*, associate professor of pathology; *Dr. Philipp Fischelis*, associate professor of histology and embryology; *Dr. Guy Hinsdale*, Hot Springs, Va., associate professor of climatology; *Dr. Arthur C. Morgan*, associate professor of medicine, and *Dr. John Stewart Rodman* and *Dr. John J. Gilbride*, associate professors of surgery.

RECENT DEATHS.

DR. ERNEST HERBERT CASWELL, of Boston, who died of nephritis in Fitchburg, Mass., on Nov. 13, was born at that city in 1876. He graduated in 1904 from the Harvard Dental School, and since that time had practised his profession in Boston. He was unmarried.

DR. RUDOLF EMMERICH, professor of hygiene and bacteriology at the University of Munich, has recently died in that city. He was born in 1852.

DR. JOHN SHRADY, of New York City, who died last week at Stamford, Conn., was born in 1829. After graduating from Columbia University and the New York College of Physicians and Surgeons, Dr. Shrady served throughout the Civil War in the second Tennessee regiment. At the close of the War he settled at Harlem, N. Y., where he continued active in the practise of his profession until 1908. He was at one time editor of the *Medical Register* and was a former president of the New York County Medical Association. He is survived by two daughters and by two sons, both of the latter also being physicians.

DR. HENRY K. YOUNG, who died on November 12 in Avon, Mass., was born at Boston in 1836. He served throughout the Civil War in a Maine volunteer regiment. He is survived by two daughters and one son.

DR. CLARENCE B. UNDERWOOD, who died on Nov. 21 at Quincy, Mass., had practised dentistry in that city for many years. He was born in 1850. He is survived by his widow and by two daughters.

BOOKS AND PAMPHLETS RECEIVED.

Quain's Elements of Anatomy. Eleventh edition. Vol. II. Part II. Splanchnology, by J. Symington. Longmans Green & Co. 1914.

The Science and Practice of Dental Surgery, edited by Norman G. Bennett. William Wood & Co. 1914.

Operative Surgery, The Head and Neck, the Thorax and the Abdomen, by Edward H. Taylor. William Wood & Company. 1914.

Symptomatology, Psychognosis and Diagnosis of Psychopathic Diseases, by Boris Sidis. Richard G. Badger. 1914.

A Manual of Physiology, by G. N. Stewart, M.D. Seventh Edition. William Wood & Co.